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37.
732.

PRINCIPLES

OF THE

THEORY AND PRACTICE

OF

MEDICINE.

PRINCIPLES

OF THE

THEORY AND PRACTICE

OF

5

MEDICINE

INCLUDING A THIRD EDITION OF THE AUTHOR'S WORK UPON

DIAGNOSIS

BY MARSHALL HALL, M.D. F.R.S.
L. AND E.

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PREFACE.

I HAVE attempted, in this work, to lay down the First Principles of the Theory and Practice of Medicine for the *medical Student*, and for the *young Practitioner*, whose *time* I have endeavoured to economise by placing many *practical* points before his eyes, at once, in the various *arrangements* which I have freely interspersed in its course. I wished not to write an unnecessary sentence, or even an unnecessary word. Perhaps, in my wish to condense, I may have omitted some things which had been better inserted, and my intention of supplying these and other defects, in my *Lectures*, may not excuse me to *all* my readers.

I propose to make my Lectures a complete course of *the Study of the Theory and Practice of Medicine*, pretty nearly according to the *plan* sketched in page 102.

The *Theory* of Medicine involves a general view of *Anatomy*, in reference to *textures* and *regions*,—of *Physiology*, or *natural actions*,—of *Pathology*, including *morbid actions* and *structural changes*,—and of *Therapeutics*, or the *actions* of *remedies*, and their *morbid* and *curative effects*. On each of these subjects I shall give a few distinct Lectures.

The *Practice* of Medicine relates entirely to actual *Diseases*, of *Systems* or of *Organs*. These, treated in the manner pointed out at page 102, and nearly according to the arrangement observed in this volume, will fill up the remainder of the Course.

In reference to another topic, I may observe that I shall attempt to set before my pupils, continually, such examples as that of M. Desessarts, of whom M. Cuvier has given the following beautiful character, in a paragraph which I dare not attempt to translate:—

"Tous ses momens de loisir furent employés à se préparer une profession indépendante. C'est à ce titre que M. Desessarts fit choix de la Médecine; mais à peine s'y fut-il livré, qu'il l'aima pour elle même, qu'il y vit à la fois, ce qu'elle est en effet, la plus étendue des sciences, le plus utile des arts, et l'état le plus digne d'un homme dont le cœur est animé de l'amour de ses semblables.

"Ce sentiment de sa jeunesse a été celui de toute sa vie; personne n'a été plus médecin, médecin de meilleure foi: la médecine était pour lui une seconde religion, dont les devoirs ont rempli ses longues années. Ne songeant ni à la gloire, ni à la fortune, incapable de jalousie, jusqu'à ses derniers jours il étudiait, accueillait avec la candeur d'un jeune homme, tout ce qui se faisait sur son art[1]."

---

[1] Éloges Historiques par M. le Cher. Cuvier; 1812; t. ii, p. 58.

14, *Manchester Square,*
March, 1837.

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PRINCIPLES
OF THE
THEORY AND PRACTICE
OF
MEDICINE.

PART FIRST.

THE THEORY OF MEDICINE.

PART FIRST.

THE THEORY OF MEDICINE.

CHAPTER I.

ON INFLAMMATION.

1. THE doctrine of Inflammation is the most important in the Theory of Medicine and Surgery.

2. Some of the provisions of Nature,—or rather of the Creator of all things,—accomplished through the medium of the action and processes of inflammation, are quite wonderful. An abscess may form in the liver; the pus may be expectorated through the bronchial tubes; and the patient may survive! An intestine may be strangulated by being intussuscepted into another portion of intestine; it may separate and pass per anum, leaving the original canal free and entire; and this patient, like the former one, may survive! If you experiment on a dog, draw out a portion of the small intestine, and tie a ligature firmly round it, so as entirely to obstruct its course, the adjacent portions of the intestine reunite, the ligature is separated into its canal, this canal itself remains pervious as before, and the animal survives the dangers of this fearful operation! Nothing ever fills me with greater admiration, than the contemplation of these wonderful results of inflammation; I had almost called them sublime! Credulous indeed must that man be, who can believe, that these things come by *chance!*

3. In the subsequent account of inflammation, as in the rest of this Volume, I have endeavoured, in the first place, not to write one unnecessary line or paragraph—leaving all amplifications for my Lectures; and, in the second place, to illustrate

each *principle* by some very interesting, important, and useful *fact;* so that, being implanted together in the memory, they may mutually recall each other to the recollection, in practice.

4. The condition and mode of action of the capillary vessels, of the secerning and absorbent vessels, of the minute and larger arteries and veins, of the heart, and of the blood; their changes; the influence of different external causes, of variety in texture and function in the parts affected; and of modifications in the condition of the part, or of the constitution or system at large; the reciprocal effect of inflammation on the system: these and a multitude of other circumstances become elements in the grand problem of the nature of inflammation.

5. The authors who have particularly advanced our knowledge of inflammation, are, Hunter[1], Burns[2], Dr. J. Thomson[3], and M. Gendrin[4]. They have treated the subject in its relations with the anatomy and with practice. They who wish to become intimately acquainted with this important subject, will find it absolutely necessary to consult and study these authors.

6. Other writers, as Kaltenbrunner, Dœllinger, Lobstein, &c. have discussed the subject more theoretically, and have especially observed the condition of the old vessels and the formation of new.

I. THE CAUSES OF INFLAMMATION.

7. The causes of inflammation may be divided into—

1. *The Mechanical.*
2. *The Chemical.*
3. *The Vital.*
4. *The Constitutional.*

8. *Mechanical* violence, inducing incision, laceration, contusion, &c. is a frequent source of inflammation. The first of these effects is simple; the subsequent inflammation seems to be Nature's process of cure, and is therefore a good illustration of inflammation from a *vital* cause. In the cases

---

[1] A Treatise on the Blood, Inflammation, and Gun-shot Wounds. 1794.

[2] Dissertations on Inflammation. 1800.

[3] Lectures on Inflammation. 1813.

[4] Histoire Anatomique des Inflammations. 1826.

of laceration and contusion, in which these are slight, we have a *physical* impression made upon the capillary vessels of the part, such as probably occurs in every case of inflammation. If the contusion be violent, there is frequently the death of some of the textures, and such a degree of injury done to the capillary vessels as may prevent their ever again conveying the blood.

9. The *chemical* causes of inflammation are principally —heat, which induces burns and scalds; cold, which occasions chilblain and frost-bite; electricity; the acids, the alkalies, &c. These probably all act by inflicting a physical injury upon the capillary vessels.

10. The principal examples of *internal* inflammation from the operation of chemical causes, are those which have arisen from the attempt to swallow hot water, or acrid fluids. Some part of these fluids may reach the stomach and produce inflammation in that organ; but the principal result is an affection (œdema) of the rima glottidis, with symptoms *resembling* those of *croup*. I first called the attention of the profession to the accident as it occurs in children from drinking out of the spout of the tea-kettle, or tea-pot[1]. A similar result followed, in one sad case, the administration of a liniment by mistake for a draught. The physician should be alive to the possibility of such an event, for the *cause* of the affection *might* be concealed by a guilty nurse.

11. The character of the *vital* causes of inflammation has already been explained, § 8. A simple incision is healed by adhesive inflammation; a thorn is removed by the suppurative; and these are vital processes, instances of inflammation excited by the vital energies.

12. The *constitutional* causes of inflammation operate in producing furunculi, or paronychiæ (παρὰ, *near*, ὄνυξ, *the nail*); of erysipelas (ἐρύω, *to draw*, πέλας, *adjoining*); of gout; &c. *Erysipelas*, in certain epidemics, is prone to gangrene. The *carbuncle of the plague*, the *pustule maligne*, and the *hospital gangrene*, afford other examples of mortification arising from constitutional causes. There is a peculiar gangrene of the *cheeks*, and of the *pudenda*, in *infants*, arising

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[1] Medico-Chirurgical Transactions, v. xii, page 1.

from constitutional circumstances, which will be noticed in a subsequent chapter. I published an account of the former[1], and Mr. Kinder Wood of the latter[2], some years ago. All these probably arise, in every case, from constitutional causes, and are to be prevented only by attention to the condition of the stomach, the bowels, the secretions—in a word, to the general health. The effects of the ergot of rye are produced through the medium of the constitution, or of a poisoned state of the system.

13. Exposure to wet and cold, rubeola, &c. induce *internal* inflammation through the medium of the general system, or, to express my meaning more distinctly, through the medium of the nervous and vascular systems.

II. THE SIGNS OF INFLAMMATION.

14. The signs of inflammation are—

1. *Redness.*
2. *Tumor.*
3. *Augmented temperature.*
4. *Augmented sensibility.*

15. The signs of inflammation, when this is *external*, are very distinctly described by Celsus: "Notæ vero inflammationis sunt quatuor; rubor, tumor, cum calore, et dolore;" Celsus very properly adds, "quo magis erravit Erasistratus, (the Broussais of the Augustan age), qui febrem nullam sine hâc esse dixit[3]." When *internal*, inflammation manifests itself by *symptoms* which vary with the functions of the part affected, of which they are modifications.

16. The augmented *redness* of parts affected with inflammation depends upon the augmented quantity of blood, and especially of its red particles, and this upon the augmented size of its vessels,—of the true capillaries, and of the minute arteries and veins, of which the former are seen to be enlarged in inflamed transparent parts, as the web of the frog under the microscope, and the latter are obvious to the unassisted eye in inflammation of the conjunctiva. See further, § 78.

17. The *tumor*, or swelling, which attends inflammation

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[1] Ed. Med. and Surg Journ, v. xv, p. 547.
[2] Med. Chir. Trans. v. vi, p. 84.
[3] Lib. iii, cap. ii, sect. 6.

depends, like the augmented redness, principally upon the augmented quantity of blood in the part. I say *principally*, because inflammation does not subsist long without more or less of *effusion*, either of albumen or *serum*, in recent inflammation, of albumino-fibrine or *lymph* in the less recent, or of both; events of vast importance in this sometimes morbid, sometimes curative, process.

18. The *heat* or increased temperature of inflamed parts is probably owing to the same cause. External parts in general are warmed by the contact of warm blood, and cooled by that of the atmosphere: their actual temperature is a mean result of the operation of these two causes. Augmented temperature may take place, therefore, if the circulation of a part be increased, or the action of the atmosphere be withdrawn. The former occurs in inflammation. More blood passes through an inflamed part, by means of its collateral minute arteries and veins and their anastomoses, than in health. Its temperature approaches that of the blood,—that is, is elevated. But the question still remains,—is there ever a degree of elevation of temperature not to be accounted for in this manner,—for instance, beyond that of the blood itself in the central parts of the system? Hunter investigated this subject. He observes—

19. "A man had the operation for the radical cure of the hydrocele performed at St. George's Hospital. When I opened the tunica vaginalis, I immediately introduced the ball of the thermometer into it, and close by the side of the testicle. The mercury rose exactly to 92 degrees. The cavity was filled with lint, dipped in salve, that it might be taken out at will; the next day, when inflammation was come on, the dressings were taken out and the ball of the thermometer introduced as before, when it rose to 98 degrees and three-fourths exactly."

20. "Here was an increase of heat of six degrees and three-fourths; but even this was not equal to that of the blood, probably, at the source of the circulation in the same man. This experiment I have repeated more than once, and with nearly the same event[1]."

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[1] On Inflammation, page 293—294.

21. "I made an incision into the thorax of a dog, the wound was made about the centre of the right side, and the thermometer pushed down, so as to come in contact, or nearly so, with the diaphragm. The degree of heat was one hundred and one; a large dossil of lint was put into the wound to prevent its healing by the first intention, and covered over by a sticking plaster. The dog was affected with a shivering. The day following, the lint was extracted and the thermometer again introduced; the degree of heat appeared exactly the same, viz. one hundred and one. This dog recovered[1]."

22. "The natural heat of the vagina of a young ass was one hundred degrees. A solution of corrosive sublimate, as much as would dissolve in a tea-cup full of water, viz. about ten grains, was injected into the vagina. In about two hours after, the mercury fell to ninety-nine degrees. Thursday morning, ninety-nine degrees; evening, one hundred. Friday morning, ninety-nine; evening, near to one hundred and one. Saturday morning, ninety-nine; evening, one hundred degrees[2]."

23. From these experiments, it is obvious that the heat of an *external* part affected with inflammation is augmented,—that it approaches more nearly to that of *internal* parts,—or of the blood itself. The temperature of internal parts subjected to inflammation undergoes no augmentation.

24. Hunter has a section entitled 'Of the production of *Cold* in Inflammation.' But it is like the last chapter of Rasselas,—a 'conclusion in which nothing is concluded.'

25. The *pain* or augmented sensibility in inflammation may depend on the augmented quantity of blood and size of the minute arteries of the part. It is, therefore, sometimes *pulsative*, that is, still further augmented under the influence of the systole (*συστέλλω, to contract*) of the left ventricle.

26. This augmented sensibility is so great, in some instances, that parts, which in a state of health are insensible, become acutely sensitive under the influence of inflammation; such are the serous membranes, cartilage, tendon, ligament, and even bone. The mucous membranes do not appear to experience the same change in regard to sensibility, when under the influence of inflammation.

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[1] On Inflammation, page 294.

[2] Ibid, page 297.

III. THE CHANGES IN INFLAMMATION.

27. The changes in the condition of inflammation are—

1. *Resolution.*
2. *Œdema.*
3. *Adhesion; Cicatrix.*
4. *Softening.*
5. *Induration.*
6. *Ulceration.*
7. *Suppuration; Pus.*
    1. *Abscess; Fistula.*
    2. *Infiltration; Diffusion.*
    3. *Its Signs and Symptoms.*
8. *Gangrene; Sphacelus.*
    1. *Circumscribed.*
    2. *Diffused.*

28. By the term *resolution* is simply meant the subsidence of the actions which constitute inflammation; the redness, tumor, heat, and pain gradually disappearing.

29. It has already been stated that the augmented bulk of a part affected with inflammation, is partly owing to the repletion and augmented size of the capillary and minute vessels, and to the interstitial effusion of limpid albumen or serum. This latter circumstance, viewed distinctly from the former, constitutes *œdema* (οἰδέω, *to swell*), and one of the early effects of inflammation. It frequently remains in the form of a pale and colourless swelling, after the vascular repletion and the consequent redness have disappeared. In one case,—inflammation of the larynx,—it is frequently the cause of death,—obstructing the upper orifice of the trachea and suspending respiration. In the eye, this condition has received the designation *chemosis*, (χαίνω, *to gape*), the distension of the conjunctiva preventing the closure of the eye-lids; it is particularly seen in that destructive inflammation of the eye arising from phlebitis[1] (φλὲψ, *a vein*). It is the *white swelling* of inflamed parts, sometimes accompanying, sometimes following, the actual inflammation.

30. If parts, divided by an incised wound or surgical

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[1] See my paper in the Med. Chir. Trans. vol. xiii.

incision, be brought into accurate contact, they contract *adhesion*, by means of an intervening deposit of coagulable lymph, or what I may term albumino-fibrine, termed *cicatrix*.

31. This adhesion is sometimes effected at once: it is then somewhat quaintly designated *union by the first intention;* sometimes other processes intervene,—the effusion of lymph and of pus takes place from the unadherent surfaces, and the adhesion is more slowly accomplished by the gradual union of the contiguous layers of lymph; in a third case, the wound may remain open, granulations sprout up and gradually fill the space, and become, in their turn, covered by lymph, which, at first liquid, becomes indurated by the absorption of its fluid particles, and at length vascular or organized, cellular, and, in every point of view, a living solid.

32. Adhesion and cicatrization may occur in any of the tissues of the body, internal and external, in cavities or in canals, and constitute many of those wonderful operations of Nature for the security of the individual, to which allusion was early made in this work, §2.

33. The next event which occurs in inflammation, is *softening*, or *ramollissement.* It is the opposite of that last mentioned, or adhesion; for in this the natural cohesion of the part affected is destroyed. It occurs in all the tissues; but especially in the parenchyma (παρὰ, and ἐγχύω, *to pour in*) of organs, the brain, the heart, the liver, the spleen, &c. and in the mucous membrane, or lining of canals, that of the stomach, the intestines, &c.; least, if at all, in the serous membranes, or lining membrane of cavities; the arachnoid, the pleura, the peritonæum, &c.

34. Softening is amongst the first effects of inflammation, —of acute inflammation; *induration* belongs to *chronic* inflammation: the former depends upon a morbid loss of cohesion of the particles; the latter, probably, upon the interstitial deposit of coagulable lymph, or albumino-fibrine.

35. *Ulceration* exists where portions of the superficial substance of a part have been removed. This takes place by interstitial absorption, sometimes *simply*, when the ulcer is said to be healthy; sometimes rapidly, when the ulceration is termed phagedenic (φάγω, *to eat*); sometimes with the separa-

tion of dead parts, when the ulcer is designated *sloughing*. The external cutaneous, the internal mucous surfaces, and the synovial membranes are those most prone to ulceration. This process in the serous membranes is rare; and when it takes place in the parenchymatous substance of organs, it is spoken of under another designation—suppuration. Deeply seated parts, as bone, ligament, cartilage, may be exposed in a state of ulceration: in the first of these textures, the process of ulceration is termed *caries;* it frequently follows the death of the part, or necrosis, (νεκρόω, *to mortify*), and exfoliation.

36. Ulceration may either proceed, or become arrested and yield to an opposite process, or cicatrization. Hunter observes—

37. "It is easy to distinguish between a sore that is ulcerating, and one which is standing still, or granulating.

38. "The ulcerating sore is made up of little cavities or hollows, and the edge of the skin is scolloped or notched, is thin, turned a little out, and overhangs, more or less, the sore. The sore is always foul, being probably composed of parts not absolutely absorbed; and discharges a thin matter.

39. "But when the ulceration stops, the edge of the skin becomes regular, smooth, a little rounded or turned in, and of a purple colour, covered with a semi-transparent white[1]."

40. An ulcerating surface is generally an absorbing surface: ulcers of Peyer's and of Brunner's glands in the intestines lead, probably in this manner, to enlargement of the *corresponding* mesenteric *glands;* ulcers about the heel from chilblain, led, in one instance, to inflammation along the *absorbent vessels* which run along the leg and thigh, which issued in repeated abscesses. The affection of the inguinal glands in chancre, and also in gonorrhœa, is a fact familiar to us all. Is there ulceration in all cases of the latter malady thus complicated with bubo?

41. *Suppuration* is one of the most frequent results of inflammation: the *pus* formed is sometimes enclosed in an orbicular cavity, under the designation of *abscess;* sometimes it burrows into the adjacent textures, under that of *fistula*, especially near the anus; sometimes it is not restricted

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[1] Op. cit. p. 460.

in its locality, but is *infiltrated* into the meshes of the cellular membrane; and sometimes it is *diffused* over the surface upon which it is formed, as in cases of acute inflammation of the peritonæum.

42. The cavity of an abscess is lined and limited by the formation of a *cyst;* effected by the effusion of albumino-fibrine. This cyst is thin in recent abscess, thicker in abscesses of longer duration, and so intimately adherent to the adjacent cellular texture as not to be readily separated or even distinguished from it.

43. The same sort of albumino-fibrine constitutes the fistula, which, in fact, is only a chronic, elongated, abscess, with an external and perhaps an internal aperture.

44. Some abscesses are neither orbicular nor fistulous, but very extensive, although there be no infiltration: such is psoas (ψόαι, *the loins*), lumbar, or iliac abscess.

45. *Infiltration* occurs in those cases of suppuration, in which, from the want of the formation of a cyst, the pus passes freely, like the serum of œdema, into the cellular membrane of the inflamed part. This infiltration of pus is observed especially in the lung, in which organ abscess is rare: in the liver, on the contrary, abscess is more common whilst infiltration is seldom seen. Infiltration of the lung is designated the grey hepatization, and succeeds to the red hepatization, or the first stage of pneumonic inflammation.

46. Suppuration is *diffused*, when it occurs over an extensive surface, as that of the arachnoid, the pleura, the pericardium, the peritonæum, the tunica vaginalis testis; but, even in this case, the space containing the pus is sometimes circumscribed by the adhesion of adjacent portions of the peritonæum, for example; the pus may at length point externally, or make its way into the intestine, or the vagina. In the first case, the abscess may be opened without the risk of exposing the general peritonæum. This event I have seen repeatedly after parturition and abortion. A similar event sometimes occurs, from the state, office, and anatomical character, of the caput cæcum coli, and has been described by Dupuytren, as I shall particularly notice in a subsequent part of this work.

47. The distinctive characters of *pus* are its opacity, its

peculiar pale straw colour, and its *globular* structure. Its globules are seen in the microscope; and they are made manifest by viewing the liquid between two portions of common plate glass, placed between the eye and a bright point of light; irides or rings, of the different hues of the rainbow, are immediately obvious. This is the experiment of the late Dr. Young, and proposed by him as a distinction between pus and mucus. The subject deserves to be pursued: opaque *puriform* mucus, true pus from ulcerated and unulcerated (serous) surfaces, tubercle, &c. should be compared. The globules of pus are supposed by M. Gendrin to be those of the blood deprived of their red colouring matter, and somewhat enlarged and deformed. Dr. Hodgkin and Mr. Lister, on the contrary, think that the globules of pus and of blood are totally dissimilar. This, and other topics connected with inflammation, still present objects of interesting inquiry. The globules of pus, more or less numerous in different cases, float in a transparent albuminous fluid.

48. The *signs* and *symptoms* of suppuration are interesting and important subjects of inquiry.

49. As external inflammation passes into suppuration, the pain becomes greater and more throbbing or pulsating; the skin becomes of a deeper red colour, smooth and glossy, and at length one *point*, more prominent than the rest, yields to pressure and presents the phenomenon of *fluctuation*, whilst its *firmer borders*, by which it is circumscribed, are distinctly traceable by the finger.

50. The *symptoms* attending and denoting suppuration are, frequently, very peculiar; they consist in *rigor* or *successive rigors*. Sometimes one rigor only occurs; sometimes several rigors occur, at uncertain periods; in other cases the rigors are repeated at such regular quotidian or tertian periods, as to lead to the idea that the case is intermittent fever or ague. I need not notice the caution in the diagnosis which this important fact suggests.

51. In other cases, suppuration takes place equally unknown and unsuspected by the patient and the physician, from the absence of the usual signs and symptoms. It is *latent* until the abscess *points*. Psoas abscess is an apt illustration of this fact. The fact itself has suggested the question

whether suppuration may occur without previous inflammation.

52. Instead of the secretion of pus, inflammation sometimes leads to *gangrene* (*γάγγραινα, mortification)* and to *sphacelus* (σφάζω, *to destroy*). The former of these terms is conventionally employed to designate the condition of the part when it is on the point of losing its vitality; the latter, to denote that of a part absolutely dead, and ready to pass into a state of decomposition. The part affected with gangrene *may recover;* the sphacelated part is already deprived of any vital function, and either *dries*, or *putrefies*.

53. As a part affected with inflammation passes into the state of gangrene, its colour, from being of a vivid red, assumes a livid, mingled red and purplish hue; its tension and elasticity diminish, and yield to a doughy state, compared to a quagmire, frequently with vesications or bullæ; its pain subsides and there is a loss of sensibility: as the gangrene passes into actual sphacelus, there are total insensibility, coldness, and discoloration, and loss of cohesion between the cutis or cuticle and the subjacent parts, and between those different parts themselves, and decomposition speedily follows. In fortunate cases, Nature effects, first, a line of demarcation and then a total separation, between the living and the sphacelated parts.

54. The part which thus loses its vitality is sometimes limited, sometimes diffused: of the former we have examples in the slough formed in the centre of a carbuncle, and in the circumscribed gangrene in the lung; of the latter, we have examples in the mortification of a whole limb from a violent injury, and in diffused gangrene of the pulmonary structure.

55. Some *parts* are more liable to lose their vitality than others: the extreme parts of the body in general, tendons, &c. are of this number.

56. Some *conditions of the system* dispose to mortification: *typhus fever* (τύφος, *stupor*), is frequently attended by mortification of the parts on which the weight of the patient principally presses in bed, as the sacrum, and of the parts to which blisters have been applied; in this fever, perforation of the small intestine occasionally occurs, probably from the same constitutional disposition.

57. The operation of some *external causes* of inflammation lead to gangrene: one of these is *cold;* chilblain, in the aggravated form of frost-bite, presents an example of this influence:—another example of this kind is afforded by the inoculation of certain poisons: in one case an insect stung the under lip; inflammation and mortification speedily followed.

58. Such are some of the forms of gangrene and sphacelus occurring in cases of inflammation. These morbid, or rather deadly, states, occur under other circumstances —chiefly of *obstructed,* or *debilitated,* circulation, independently of inflammation, as will be particularly noticed in a subsequent part of this volume. The *gangræna senilis* from disease of the arteries of the lower extremity, and the *dry gangrene* induced by the ergot of rye, afford examples of mortification unconnected with inflammation.

59. Nothing can illustrate the varied phenomena of inflammation, on a minute scale, better than the variolous pustule: at first, we have simple inflammation—inflammation of a sebaceous gland—redness and tumor; on the third and fourth days we have the effusion of *serum,* a vesicle, the duct of the gland tying down its centre; on the fifth day, we observe the effusion of *pus* around this central point and within the external margin of the vesicle, the intervening space being occupied by transparent serum, and appearing of a red, flesh-colour, well contrasted with the opaque pus, and there is a surrounding *areola* of deep inflammation; on the seventh or eighth day, the serum is entirely replaced by pus; and on the eighth or ninth, the central duct has been absorbed or has sloughed, and the pustule is orbicular. There is also the early effusion of *lymph;* and, at a subsequent period, it is found that a portion of the cutis vera has *sloughed.* The whole of this series of the phenomena of inflammation is followed by *cicatrisation,* again implying the effusion of *lymph.* See § 134.

IV. THE SYMPTOMS IN INFLAMMATION.

60. By the symptoms (σὺν, and πίπτω, *to coincide*) in inflammation, I mean the affections of the *general* system, as distinguished from those of the *part* immediately subjected to the disease; they require to be traced in reference,

1. *To Inflammation.*
2. *To Suppuration.*
3. *To Gangrene.*

61. In acute *adhesive* inflammation, the beat of the heart and of the pulse becomes stronger, and generally more frequent than natural; there is frequently rigor; but there is, generally, little or no heat of skin, no headache or vertigo, no muscular tremor or debility, no alteration in the secretion of the urine; in a word, scarcely any of the symptoms which characterize *fever;* but there is augmented power to bear the loss of blood.

62. *Suppuration* is frequently announced by a new, severe, and perhaps repeated, rigor. Sometimes it requires much skill to distinguish the general affection in suppuration from intermittent fever; for paroxysms of rigor, heat, and perspiration occur in various succession, as I have already observed, § 49.

63. *Gangrene* is depicted in the collapsed condition of the countenance and of the general system: paleness, and cold, clammy, perspiration, and sunken features; a similar condition of the general surface and of the extremities; sub-delirium; tremor; oppression; sickness; a dry, brown tongue; sordes on the teeth; a feeble, thread-like pulse:—such are the *typhoid* symptoms (τύφος, *stupor*, ειδος, *likeness*) which denote the occurrence of gangrene.

V. THE NATURE OF INFLAMMATION.

64. In treating of the *nature* of inflammation, it will be necessary to consider—

1. *The true Capillary Vessels.*
2. *The Secretory Vessels.*
3. *The Absorbent Vessels.*
4. *The newly-formed Vessels.*
5. *The minute Arteries.*
6. *The minute Veins.*
7. *The larger Vessels and the Heart.*
8. *The Blood itself.*

65. From my own observations of the condition of the capillary vessels in the web of the frog, in inflammation, I should conclude that each cause of inflammation first induces

such a *physical* effect upon the internal surface of those vessels, as leads to the adherence of the globules of blood to it, and to their ultimate stagnation. This stagnation augments as the inflammation increases and becomes more diffused, and seems to constitute the essential character of the disease.

66. I have never been able to detect any action in the capillary vessels themselves,—any augmented or diminished action on the application of stimuli; and I believe that those who have fancied that they have observed such phenomena, have overlooked the effects of the infliction of pain upon the animal, and of the application of a stimulus upon the cutaneous tissues, and the subsequent adherence of the globules of blood to the internal surface of the capillary vessels.

67. It is, probably, by the partial obstruction to the circulation in the capillaries, that the minute arteries become enlarged, as I shall have occasion to state presently, according to the well-known *law*, that muscular organs augment with obstacles to their functions. The augmented action of the arteries probably induces the minute ecchymoses (ἐκ, and χύω, *to pour out*) observed in inflamed parts.

68. The stagnant globules gradually lose their form, their colour, their distinctness, and the cellular membrane passes into irregular shreds.

69. It is probably by the fact of stagnation that inflammation differs from mere *blushing*, from *eruptions*, and, in some degree, from *erysipelas*.

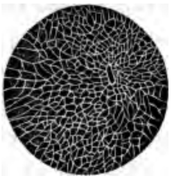
70. It is obvious that the *secerning vessels* of an inflamed part are variously affected in the varied conditions of inflammation: in the lower degrees of inflammation we observe the effusion of *serum;* in higher degrees of inflammation we see the secretion of albumino-fibrine or coagulable *lymph;* and in still higher degrees of this disease, we have the secretion of *pus:* with the serum, and even with the lymph, we have occasionally the appearance of some portion of the red globules, or of the *colouring matter*, of the blood.

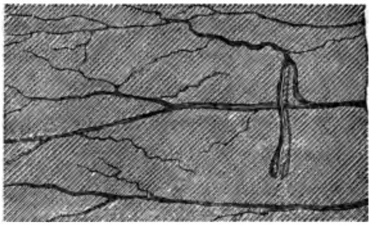
71. Under some circumstances, there is no doubt that these effusions of serum, lymph, and pus, are really secretions; when they occur, for example, at the surface of serous membranes; and, with the substitution of mucus for serum,

and with the inversion of the order in which lymph and pus are thrown out, in the mucous membranes. Is it probable that these processes should be of one nature when they occur upon surfaces where they can be distinctly observed, and of another, when they take place in parts more deeply seated and less exposed to observation? I am inclined then to view the separation of albumen, of albumino-fibrine, of pus, from the serous membranes,—and of mucus, pus, and of albumino-fibrine from the mucous membranes, in the varied degrees of inflammation,—as the result of peculiar processes by means of which these matters are *secreted* from the blood. And I would extend the same remark to the formation of cicatrix, and the formation of pus and of cysts—abscesses—in other cases.

72. But if the functions of the secerning vessels undergo particular changes, in inflammation, those of the *absorbent* vessels are not less modified: the progress of a phagedenic ulcer, the separation of a sphacelated part, can only be effected by means of the absorbent vessels,—the true absorbents, or the veins. The fact of ulcerated surfaces being in general absorbing surfaces, § 40, demonstrates the same thing.

73. Our next inquiry is into the newly-formed vessels. After lymph has been long poured out, it is found to become organized, that is, numerous vessels, carrying blood, are observed in it, pursuing a various course. Such vessels are represented in the subjoined wood-cuts, copied from plates by Monro[1], Hunter[2], and Lobstein[3]. The first shews the newly-formed vessels in cicatrix; the second a vessel passing through a small portion of pendulous coagulable lymph:





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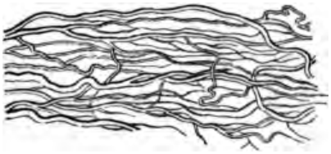
[1] On the Nervous System, Tab. XLVI, fig. i, p. 175.

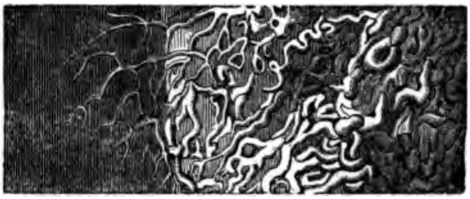
[2] On Inflammation, p. 573.

[3] Anatomie Pathologique, pl. vi.

the third, numerous vessels formed in a layer of lymph:



Vessels have also been observed extending into a coagulum of blood, as in this representation, also taken from Hunter:



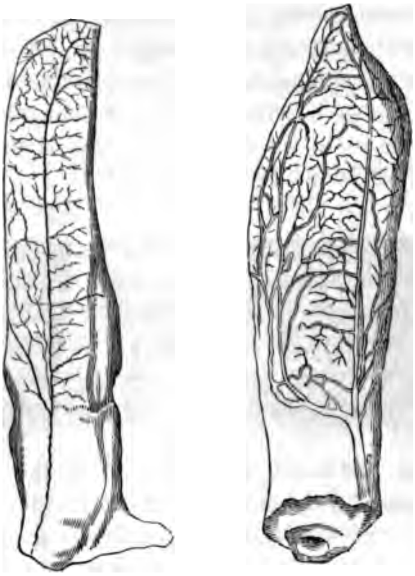
The coagulum had been poured out from the surface of a puncture or small incision made by the trocar for the cure of hydrocele; it adhered to the investing membrane of the testis, by means of these numerous blood-vessels. In a third case, new blood and new vessels appear to be formed, which have no connection whatever with the living structure.

74. It is generally asserted that there is a series of vessels which only circulate the serum of the blood, and which exclude its globules. I believe this is a mere hypothesis, and that there is no evidence of the existence of such vessels. Vessels which only admit of single globules will appear colourless. In looking upon, or through, the web or the mesentery of the frog, we only detect lines of redness in the course of arteries and veins which are large enough to admit a considerable number of globules in the space of their diameter. In inflammation, *the minute arteries*, which usually convey only single globules at a time, enlarge and admit a greater number, acquire the colour of accumulated globules of blood, give this colour to the parts in which they are situated, and become obvious to the naked eye. This is distinctly traceable in inflammation of the conjunctiva.

75. The condition of the *minute veins* has not been ascertained.

76. This enlargement of the blood vessels is not confined to the *minute* arteries. The *larger arteries* in the

immediate vicinity of the inflamed part, also become greatly enlarged. This effect is distinctly seen in this sketch from Hunter:

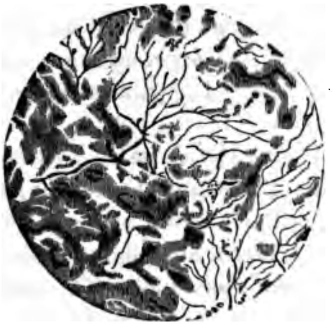


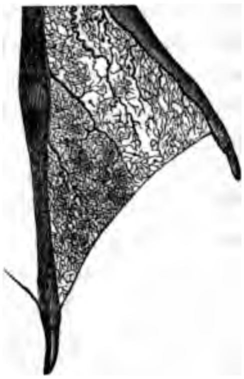
It represents the two ears of a rabbit, one inflamed, in consequence of having been frozen and thawed, the other in the natural state. They were injected at the same time, and consequently with the same degree of force. The artery of the inflamed ear is observed to be considerably larger than the corresponding artery of the other ear.

77. It is not certainly known how far this enlarged condition of the arteries extends from the seat of inflammation. The pulse of the radial artery, leading to an inflamed hand, is more forcible than that of the other wrist; the veins leading from the inflamed hand yield their blood more freely than the similar veins of the other arm; the heart also beats with an augmented impulse and greater frequency. These are the facts which prove the influence of the inflammation of a part upon the arteries and veins in its vicinity, and upon the heart itself.

78. It has been much disputed whether augmented redness in an internal part indicates inflammation; the distinction between the redness of an inflamed part, and that of a part congested by an impeded flow of blood along its veins, has not been clearly demonstrated. The question might be

readily submitted to experiment: we need only induce inflammation of the mucous membrane of the small intestine in one dog, tie the vena portæ in a second, and compare the two accurately, with and without injection by the arteries and by the veins. In the inflamed part we have frequent, slight ecchymoses, as in this sketch from Hunter, of a magnified portion of inflamed tunica vaginalis testis; and I have seen the same appearances in the inflamed web of the frog:





What are the comparative appearances in *congestion* from obstructed return of venous blood?

79. The blood itself is well known to undergo considerable changes in inflammation: the appearances of cupping, and of buff, of the blood drawn from a vein are sufficient evidence of this fact; if the same appearances have not been observed so familiarly upon arterial blood, it is probably because arteriotomy (ἀρτηρία, *an artery*, from ἀὴρ, *air*, τηρέω, *to keep;* τομὴ, *a section*) is much less frequently performed than venæsection. See further, § 138, 139.

80. I have thus endeavoured to give the *facts* which we possess in regard to the nature of inflammation, whilst I have discarded all useless *conjectures*. The condition of medical science still requires this separation of what is ascertained, from what is only imagined,—of the true from the false: to discover the former, and to detect the latter, are equally benefits conferred upon our profession.

V. THE DISTINCTION BETWEEN INFLAMMATION AND CONGESTION.

81. I have already alluded, § 78, to the distinction between inflammation and *congestion*. As the former origi-

nates in the capillary vessels, the latter is generally induced by undue impulse given to the arterial blood, or to impeded flow of the blood in the veins. Of the former of these we have examples in cerebral apoplexy from hypertrophy of the *left* ventricle, and of pulmonary apoplexy from hypertrophy of the *right*[1]. Of the latter, I know of no example so interesting as the following:

82. *Case* I. Mr. C——, aged 63, a barrister, called on me on the 10th of September, 1835. He had returned from the circuit, during which his friends had observed his altered appearance. I was struck with his *breathlessness*, small, indistinct pulse, pallor, thinness, &c. I appointed to see him at home.

83. On the next day I saw Mr. C. at his own house. There were breathlessness on the slightest exertion, augmented impulse of the heart, without either distinct second sound, or *bruit de scie*, slight *anasarca*, and slight *icterus*.

84. The progress of the case was rapid. The breathlessness became urgent, there was a distinct rattle over the posterior right side of the thorax; the left ventricle beat rapidly, with considerable impulse and without distinct second sound, or bruit; there were some cough, distinct icterus, and augmented anasarca. The jugular veins were turgid; the pulse was small, irregular, indistinct.

85. To these symptoms hæmoptysis succeeded. The only position which could be sustained was the erect. The cough became troublesome. The breathlessness, the rattle on the right posterior side of the thorax, the rapid forcible beat of the heart without second sound or bruit, the small, indistinct pulse, the icterus, the anasarca, continued, with occasional sickness.

86. Gradually the cheeks became cool, the beat of the heart less forcible, the pulse less indistinct, the posture less raised; the extremities cold and clammy, and the patient sank very slowly during several days.

87. *Examination.* The organs were examined thirty-six hours after death, on September 29th, 1835.

88. There were slight icterus and anasarca.

89. *The head* was not examined.

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[1] Clinique de l'Hôpital Necker, par J. Bricheteau; Paris, 1835, p. 133, 214.

90. *The thorax.* The *left* cavity of the pleura contained one pint of sero-sanguineous fluid.

91. The costal pleura was very vascular; there were no adhesions, except between two contiguous portions of the lung, and of this to the pericardium. The *right* cavity of the pleura was obliterated by adhesions.

92. The *trachea* and bronchia were filled by frothy bloody mucus. The bronchial tubes were dilated, and their lining membrane redder than natural.

93. Both lungs, but especially the right, were gorged with bloody fluid, so that only the upper portion gave the healthy crepitus on pressure between the fingers. A portion of the lower lobe of the *right* lung presented a circumscribed apoplexy, of the size of an egg; similar but smaller apoplexies were found in the middle lobe, and in the upper lobe of the *left* lung.

94. The two layers of pericardium adhered by means of coagulable lymph, which admitted of being readily torn and stripped off. This membrane was very vascular within; and, on its exterior surface, it was loaded with adeps and serum. The *heart* was considerably enlarged: the *right auricle* and ventricle were dilated and thickened; the auriculo-ventricular and pulmonary valves free from disease; the pulmonary arteries and their branches appeared enlarged: the *left auricle* was much dilated and hypertrophied; the auriculo-ventricular valve was very much thickened, of the firmness of cartilage, and admitted one finger only; the *left ventricle* was slightly enlarged and hypertrophied; the *aortic* valves were ossified and rigidly immoveable, and their orifice so contracted as not to admit the little finger.

95. *The abdomen.* The peritoneal cavity contained no fluid. The *liver* was small, and its surface granulated. It was shewn to Mr. Kiernan, who stated that it was in the second stage of hepatic-venous congestion. The gall bladder was full of dark-coloured bile; its ducts free.

96. The peritonæum covering the intestines was deeply congested. The intestines themselves, from the middle of the jejunum to the rectum, were highly congested—the valvulæ conniventes being of a deep purple hue and presenting numer-

ous small patches of ecchymosis. The spleen, pancreas, kidney, &c. were healthy.

97. It is impossible that morbid appearances should follow in a more distinct order, or account more lucidly for the symptoms during life. I know of no case on record so illustrative of the effect of obstruction of the circulation, upon the *arrière* part of that circulation.

98. The breathlessness is accounted for by the condition of the valves of the aorta and the left auriculo-ventricular valve. The smallness and indistinctness of the pulse by the former. The turgid jugulars by the impeded circulation, propagated from the lungs to the right side of the heart.

99. The impeded flow of the blood through the aortic and mitral valves, led to *congestion* in the lungs, and this amounted to such a degree as became true '*apoplexie pulmonaire*'*;* in consequence of this impeded circulation in the lungs, we have congestion of the hepatic vein in its second stage; as a further consequence of hepatic-venous congestion, we have congestion of the veins of the intestine, so remarkable on the post-mortem examination.

100. The congested state of the liver led to the icterus, and to the hæmorrhagic state of the intestine. That of the vena cava to the anasarca.

101. It is impossible to imagine a *series* of phenomena more distinctly connected: the smallness of the pulse, with the contracted aortic valve; the congested lung, with impeded circulation through the left side of the heart generally; the impeded flow of blood through the right side of the heart, and the turgid jugulars, with the congested lung; the congested hepatic vein, with the impeded flow of blood through the right-side of the heart; the progressive, though *arrière* congestion of the hepatic veins, with icterus, and of the *roots* of the vena portæ, in the intestine, with that of the hepatic vein.

102. This case conveys a true idea of congestion as it occurs in the lungs, the liver, the intestine, from the interrupted course of venous blood. Doubtless, congestion occurs under various other circumstances: the spleen appears to be congested in the cold stage of intermittent, and in purpura. In typhus we have splenization of the lung and congestion of the spleen.

VI. THE DISTINCTION BETWEEN INFLAMMATION AND IRRITATION.

103. *Irritation* and inflammation are frequently allied together as *cause* and *effect*. Yet there is a real distinction to be drawn between them. Calculus in the gall-ducts, or in the ureter, may be a frequent, occasional, or permanent source of irritation, and of nothing more; but there may be the gradual supervention of inflammation.

104. On the other hand, there may be sources of irritation with scarcely any disposition to inflammation: the irritation of indigestible food in the stomach, and of fæces, morbid in themselves, or too long retained, in the bowels, are examples of this kind, of great practical moment, in their effects on the system, as will be particularly noticed hereafter.

105. In relation to inflammation, the subject of this chapter, there is, however, another view to be taken of irritation: an *inflamed* ovarium may *irritate* the peritonæum, occasion the effusion of serum, and so prove a source of *ascites* (ἀσκὸς, *a sack*); an inflamed testis may, in the same manner, excite hydrocele (ὕδωρ, *water*, κήλη, *a tumor*): the excited disease is to be cured, in some cases, only by subduing the exciting disease. Not only serum—liquid albumen,—but lymph, albumino-fibrine, and even the colouring matter of the blood, may be thus secreted: in an interesting case of cirrhosis (κιῤῥὸς, *yellowish*), there were ascites, and over the surface of the rough liver, a thin layer of transparent lymph, nearly as red as the coagulum of the blood; there were, in addition, slight icterus, and œdema of the small intestines, probably from *congestion* in the hepatic vessels and minute gall-ducts. A source of irritation in the large intestine sometimes induces the secretion of mucus, so viscid that it retains the cylindrical form when passed per anum. In one example of this kind, shewn to me by Dr. Harwood, of Hastings, this mucous false-membrane was tinged with the colouring matter of the blood. This appearance of *formed* mucus is common in constipation, from the use of purgative medicines, but especially from the use of warm-water enemata. I have never known it to be of the least consequence.

VII. INFLAMMATION MODIFIED BY TEXTURES.

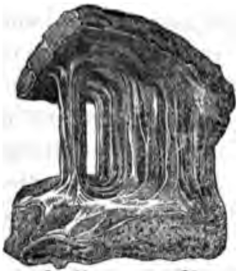
106. The modifications impressed upon the actions of inflammation, by variety in the textures of the parts, are of the most important and interesting character. The textures to be particularly noticed, in this place, are the following:

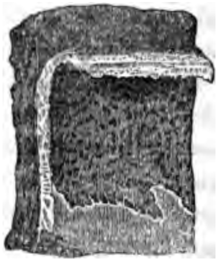
1. *The Serous Membranes;*
2. *The Mucous Membranes;*
3. *The Cellular Tissue;*
4. *The Parenchymatous substance of Organs;*
5. *The Fibrous Tissues, and especially,*
    1. *Tendon;*
    2. *Cartilage;*
    3. *Ligament;*
6. *Bone;*
7. *The Cutaneous Texture.*

107. Inflammation of the *serous* membranes, in its earliest stage, and in its lowest degree, is marked by redness: and this, when carefully and minutely examined, is found to consist, in *points*, *stars*, and *arborescent forms*, arising, 1, from enlarged vessels, and 2, from extravasated portions of blood. Compare § 78.

108. Sometimes, although rarely, there is *dryness* of the membrane from checked secretion.

109. Far more generally there is *augmented effusion* from the surface of the inflamed membrane: this effusion consists, 1, of *serum*, or limpid, fluid albumen; 2, of coagulable *lymph*, albumino-fibrine, in *layers* spread over the surface of the membrane, or *adhesions* between its contiguous surfaces, as in the annexed representations of adhesions of the pleura, from Baillie:





sometimes of albumino-fibrine of a deep red colour, from the presence of the colouring matter of the blood; 4, of *pus*, or *puriform* fluid; 5, of *sanguineous* serum.

110. The *adhesions* of which I have spoken, are sometimes little coherent; sometimes they are firm and tenacious; they are close or elongated; and they are frequently organized and minutely injected by newly-formed vessels, § 73, and even the seat of new disorganizations, as pus, tubercle, &c.; at length they resemble the true cellular or serous membranes themselves.

111. The last character of inflammation of the serous membranes is a most important, although a *negative* one; it rarely leads to *ulceration*, and, when it does, contiguous surfaces have generally contracted adhesions, through which the ulceration proceeds.

112. How different from these, are the usual phenomena of inflammation when this attacks the *mucous* membranes!

113. There is, however, still, in the first stage, augmented redness and injection, with enlarged blood vessels, as is obvious in inflammation of the conjunctiva.

114. In the next place, augmented secretion of *transparent mucus* is observed; but this gradually becomes *opaque and puriform;* and it reassumes its transparent character as the inflammation subsides. These changes are familiar to us in bronchitis. In some instances the mucus is tinged with blood, an appearance frequently seen in *bronchitis*, and almost constantly in *colitis* or *dysentery*.

115. In inflammation of the mucous membrane, we rarely see the exudation of coagulable lymph: this event takes place, however, in the trachea, in croup, and in the uterus in dysmenorrhœa, and assumes, in each case, the form of a false membrane; it also occurs in *extreme* cases of inflammation of other mucous membranes; it was induced, in an experiment of Hunter[1], by injecting a solution of the oxymuriate of mercury into the vagina of an ass.

116. In these respects, inflammation of the mucous membranes *resembles* that of the serous membranes; but there are other phenomena in regard to which these membranes are, happily, diametrically opposed to each other.

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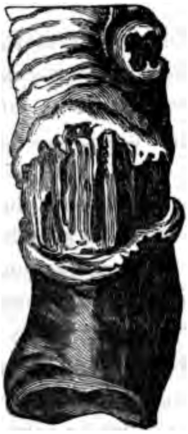
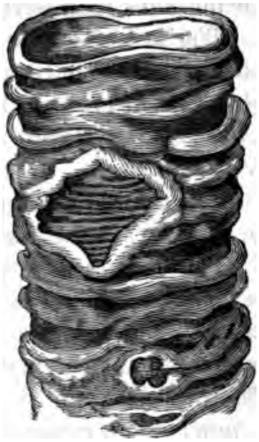
[1] On Inflammation; page 297, 575.

117. It is a frequent event for the inflamed mucous membrane to undergo the change termed *softening*, or *ramollissement;* this is observed especially in the stomach and in the intestines.

118. Another frequent consequence of inflammation of the mucous membranes, is *ulceration*. This event is common in inflammation of the mucous lining of the stomach and especially of the intestines.





119. Before I proceed to detail the phenomena of inflammation in the other textures, I shall adduce, at length, several most interesting illustrations of those of serous and mucous membranes, to which illusion has already been briefly made, § 2; and then I will suppose these properties reversed, and imagine what fearful consequences would arise!

120. Suppose an abscess in the liver. It enlarges; it proceeds to evacuate itself: this may be effected, externally, in the hypochondrium; internally, into the intestine, or through the lungs into the bronchia. In the first case, adhesive inflammation unites the two contiguous portions of peritonæum, and the subsequent ulcerative process pierces through these two folds of membrane with the intervening layer of albumino-fibrine,—and then through the external integuments. The cavity of the abdomen is protected and preserved from an effusion of pus, which would immediately induce a terrible and fatal peritonitis! In the second case, similar phenomena occur, and the abscess finds an issue into

the intestine, the abdomen being still protected and preserved as before. In the third case, the two contiguous peritoneal surfaces first, and then the two adjacent pleural surfaces, unite by albumino-fibrous adhesions; and, lastly, the ulcerative process proceeds to open a way for the pus through these adherent membranes, the intervening diaphragm, the cellular tissue, and the bronchial parietes, and the pus is eventually expectorated, the cavity of the abdomen and that of the pleura being equally preserved!

121. These facts are indeed wonderful enough. Still more wonderful are the results of the following experiments which I quote from Mr. Travers' interesting volume on 'Injuries of the Intestines[1].'

122. "A ligature of thin packthread was firmly tied around the duodenum of a dog, so as completely to obstruct it. The ends of the string were cut off and the part returned. The abdominal wound was then closed, and the animal expressed no sign of suffering when the operation was concluded. On the following day he was frequently sick, and and vomited some milk which had been given him. His respiration was hurried. Third day, his sickness continued and he vomited some bilious fluid. Fifth day, he passed a copious stool of the same appearance as the fluid discharged by vomiting. His sickness from this time ceased, and his breathing was natural. He took bread and milk, and drank abundantly of water. Seventh day, he had three similar evacuations and appeared well, eating animal food freely. Tenth day, he had a natural solid stool of a dark colour. On the fifteenth day, his cure being established, he was killed.

123. "*Examination.* The lacteal system was well displayed, the animal having fed recently. A portion of omentum connected to the duodenum was lying within the wound, and the folds contiguous to the strictured intestine adhered to it at several points. A slight circumferential depression was observed in the duodenum. The gut was then carefully laid open; the villi appeared turgid with chyle. This surface was more vascular and of a deeper colour than usual. A transverse fissure marked the seat of the ligature. The edges of the sections were distinctly everted, and the appearance corre-

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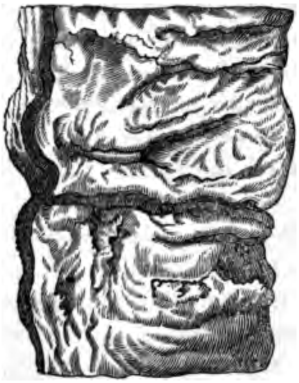
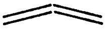
[1] Page 98—99.

sponded with that of the union by suture, hereafter to be described."

124. The appearances subsequent to this experiment are represented in the subjoined sketch:



125. "Having made an opening into the abdomen of a dog, and brought out a fold of ileon, it was strangulated by a ligature applied a little above the angle. The strangulated piece was then cut off below it, and the cut extremities connected by the ligature were carefully put back into the belly. The wound was sewed up, and the animal did not appear to suffer materially.—Second day. He was sick, vomited bile, but drank water and a little milk.—Third day. Continued much the same.—Fourth day. Passed a solid stool, and from this time recovered his looks and spirits. After a month, having perfectly recovered, he was shot.

126. "*Examination.* The external wound was healed. The abdomen presented no appearance of disease, and but few adhesions of the peritoneum. The ileon lay upon the vertebræ in this position :  At the internal angle the sides adhered to each other. The opposite was closed by adhesions to the omentum and neighbouring intestine. Upon carefully laying open the tube, it appeared that the ligature and the ends of the gut had been discharged through the canal. At one point the line of union was scarcely completed; and there appeared a little cyst, like an abscess, communicating with the tube, in which the tied ends of the gut had been lodged previously to their being voided[1]."

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[1] Travers, page 342—343.

127. Ramdohr's operation in a case of strangulated hernia, is well known. "Having excised the sphacelated portion, he inserted the upper sound extremity within the lower, confining them closely by a suture in that position. In this state he reduced the gut, connecting it by the end of the suture to the wound. The matters soon passed *per anum*, and the woman recovered. A year afterwards, she died of a pleurisy. Ramdohr examined the united intestine, which he found adhering to the parietes. Heister, to whom he presented it, informs us, that he preserved it in his Museum to convince the incredulous[1]."

128. *Similar* phenomena are also observed in the human subject, in cases of *hernia* (ἕρνος, *a branch*) and of *intus-susceptio*, as I shall have occasion to observe when I come to treat of diseases of the intestines.

129. In all these cases the contiguous points of serous membrane unite by the effusion of albumino-fibrine; the interior tissues, with the mucous membrane, are severed by the ulcerative process. The cavity of the peritonæum is *guarded*, from the irruption of the fæcal matters, by *adhesive* inflammation; whilst the canal of the intestine is *preserved entire* by the *ulcerative!*

130. Now let us suppose these properties of the serous and mucous membranes reversed! Every inflammation of the former would tend to ulceration and abscess; every inflammation of the latter, to close a canal!

131. But I must now proceed to describe the effects of inflammation in the other tissues; and, first, in the *cellular tissue*. It is in the cellular tissue that we most frequently observe the usual phenomena and signs of inflammation, already described § 14—26, and the changes in inflammation, detailed § 27—59. To these paragraphs I must refer my reader, in order that I may avoid repetition.

132. There is a special inflammation of the cellular membrane which I must, however, notice distinctly, although briefly, in this place. It is *inflammatory anasarca*. It results from exposure to damp and cold; and is a sequela of scarlatina. It issues, not in the effusion of *lymph*, or of *pus*,

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[1] Travers, op. cit. p. 268—269.

but of *serum*, into the meshes or cells of this membrane. It is sometimes conjoined with serous effusion within the head, thorax, or abdomen. It requires, and bears, the full detraction of blood.

133. I have several remarks to make upon inflammation occurring in tissues compounded of the serous, mucous, and cellular. 1, *Adhesions* usually occur on their *exterior* surface: when such a surface is inflamed, it irritates the *contiguous* serous membrane, and both pours out lymph itself and induces the effusion of lymph from that membrane, § 103; mutual adhesion is the consequence, effected through the medium of this albumino-fibrine. 2, *Ulcerations*, on the contrary, usually occur in the *interior* surface of such composite tissues: the mucous membrane first loses its firmness and thickness, and then suffers a loss of substance by ulceration. 3, In cases of *perforation*, ulceration usually proceeds from *within;* they also generally occur under peculiar states of the constitution *opposed* to adhesive inflammation, and *disposed* to sloughing, as *typhus*. It is on account of this latter circumstance, that we see perforation of the intestine in typhus, whilst such an event in phthisis is so rare, although ulceration of Peyer's glands occur equally in both. The perpetual movement of the lung prevents such effectual adhesions of the two contiguous portions of the pleura, as might prevent the perforation of this membrane which occasionally occurs in phthisis.

134. The *parenchymatous substance* of organs is apt to be softened by acute, and indurated by chronic, inflammation, to become the seat of abscess, of gangrene. Softening, induration, abscess, are frequently seen in the brain; abscess in the liver; gangrene in the lungs. See § 34; 45; 54.

135. Of the *fibrous tissues*, tendon is apt to slough, cartilage and ligament to ulcerate.

136. Caries and necrosis are well-known frequent occurrences in bone.

137. The *cutaneous textures* resemble, in their disposition to ulceration, &c. the internal mucous linings of canals, to which they give origin. Hordeolum, furunculus, paronychia, anthrax (*ἄνθραξ, a burning coal*), erysipelas, afford specimens of the disposition to partial and incomplete suppu-

ration, sloughing, or gangrene, which characterize inflammation of these textures. The various cutaneous diseases illustrate the other forms which inflammation assumes when it affects the skin.

138. The phenomena of inflammation are perhaps most distinctly traced in the *eye*. Constituted by numerous serous, fibrous, mucous, and other textures, it presents inflammation under all the modifications which difference of texture produces. It is also an organ belonging equally to the province of the physician and the surgeon. The works of Saunders and of Mr. Wardrop will be studied with great advantage, in this point of view.

139. The eye is an interesting organ under another point of view, in its relation to inflammation: the eye is very apt to suffer from mere *debility:* dogs fed upon indigestible food by M. Magendie, and bled to a state of exhaustion by myself, became affected with inflammation, tending to ulceration; and I have seen a *similar* event from debility in the human subject. In an experiment, in which M. Magendie divided the *fifth* pair of nerves within the cranium, the eye underwent similar destructive changes. The eye suffers from destructive inflammation in phlebitis, and is frequently the seat of encephalosis.

VIII. INFLAMMATION MODIFIED BY CONDITIONS OF THE SYSTEM.

140. Inflammation is much modified in its character and effects by different conditions of the general system. In *rubeola*, the true inflammatory or *phlogistic* (φλέγω, *to burn*) diathesis (διατίθημι, *to dispose*) prevails; the larynx and trachea are inflamed and pour out albumino-fibrine; the bronchia and pleura are affected by such inflammation as is the usual result of exposure to damp or cold. In *scarlatina*, the fauces, nares, and pharynx (φάρυγξ, *the throat*) are inflamed with a disposition to ulceration and sloughing; the character of the general fever, and of the local inflammation, is frequently *typhoid*. After the fever has terminated, the general diathesis becomes phlogistic, as we observe in the character of the acute anasarca, § 127, and pains of the joints, which occur as sequelæ in this disease.

141. In §59, I have described the series of phenomena which occur in the variolous pustule. The description belongs to that form of the disease termed *distinct*. In the *confluent variola*, a very different series of events takes place, under the influence of a typhoid state of the system: the *papulæ* are less hard and elevated; the *serum* and *pus* are less distinctly characterized, and resemble an undefined, and sometimes bloody, *sanies;* the progress, the circular and orbicular forms, the periods, the termination of the eruption, are less marked, less distinct; and there is a greater disposition to *slough*, and consequently, to *scars*. The influence of varied states of the system, or the character of local inflammation, cannot be more vividly illustrated than by the contrast of the pustules in distinct and confluent variola.

142. But the influence of constitutional condition is extremely obvious in typhus itself: the disposition to softening of the organs, to sloughing of the integuments, and to the effusion of a sanguineous serum, is extremely marked: it is from this disposition that the ulceration of Peyer's glands is apt not to be conjoined with the effusion of lymph, but with the formation of slough, leading to the fatal perforation of the ileum, occasionally observed in this terrible disease.

143. Furunculus and paronychia in the young, and carbuncle, in later years, are all illustrations of the influence of constitutional diathesis, upon local inflammation. The same remark may be applied to erysipelas in its phlegmonous and gangrenous forms, in the former of which there are frequently extensive, diffused, and deep-seated suppuration and sloughing, and in the latter, actual mortification of the whole of the part or limb involved in the disease.

IX. THE INFLUENCE OF INFLAMMATION ON THE SYSTEM.

144. But if the influence in the constitutional diathesis upon local inflammation be strongly marked, that of inflammation upon the general system is not less so. I shall illustrate this subject by a reference to the influence of inflammation in—

1. *The Serous,*
2. *The Mucous,* and
3. *The Compound Tissues.*

145. In inflammation of the *serous* membranes, there are, in general,—1, little heat of surface; 2, little frequency of the pulse; 3, little muscular debility; 4, little tendency to delirium; and, on the other hand, there are, 5, acute pains, 6, great power to bear the loss of blood; 7, great disposition to buff and cupping of the blood itself. How different from *fever!*

146. Let these phenomena be compared with those of inflammation of the *mucous* membranes: in this, there is far less pain, far less power of bearing the detraction of blood, and far less disposition to buff and cupping of the blood.

147. There is, however, an exception to this general rule in regard to the influence of inflammation of the mucous membranes, in the case of *croup*, whether common or rubeolous: in this disease there is great power of bearing the loss of blood.

148. In inflammation of the parenchymatous and compound tissues, there is an intermediate condition of things, differing with the organ affected.

X. DIFFUSION OF INFLAMMATION.

149. Inflammation is by no means always confined to one part, or organ.

150. *Eruptive* inflammation is very apt to extend from the cutaneous to the mucous tissues, and especially to those of the throat: *scarlatina* affects the conjunctiva, the posterior nares, the fauces, the pharynx, &c. *rubeola*, the conjunctiva, the anterior nares, the larynx, the trachea, the bronchia, &c.

151. We frequently observe *diffused* inflammation of the *mucous* membranes, those of the air-passages, and of the digestive organs, being simultaneously or consecutively affected; this is particularly the case with erythematous (ἐρύθημα, *redness*) and aphthous (ἅπτω, *to inflame*) inflammation.

152. Sometimes too, though less frequently, several of the *serous* membranes, especially the pleura, the pericardium, and the peritonæum, are simultaneously affected with inflammation, with the effusion of *serum*, *lymph*, or *sanguineous* fluid.

153. Pus is frequently found in various organs, and in several parts of those organs at the same time; as in the integuments, the eye, the brain, the lungs, the liver, &c. in cases of *phlebitis*, succeeding operations, accidents, parturition, &c.

154. Pus may exist in the *veins*, in connection with an abscess, or from phlebitis; and it may exist in the *lymphatics*, either in connection with an abscess, or from inflammation of these vessels. These facts are particularly observed in *puerperal* metritis (μήτρα, *the uterus*), or metro-peritonitis.

XI. ON INFLAMMATION AS A CURATIVE MEANS.

155. Without inflammation, the art of Surgery could not exist. Every operation implies the resources of Nature in healing divided parts. This is accomplished by the immediate adhesion of contiguous surfaces, *union by the first intention;* or by the gradual filling up of cavities, *granulation.*

156. Inflammation, as a curative measure, is sometimes employed by Nature, sometimes by Art.

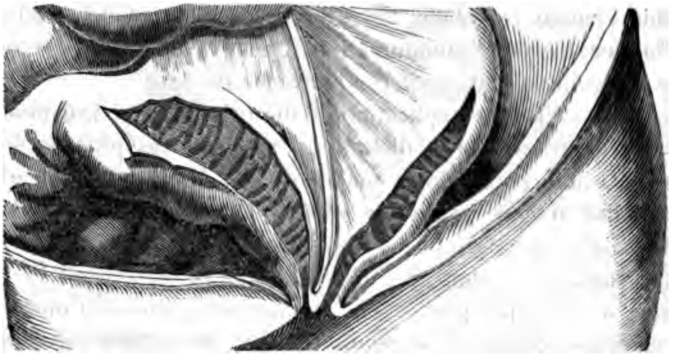
157. A coagulum of blood is formed in the substance of the brain, in *apoplexy:* in the first place, albumino-fibrine is thrown out, forming a cyst which lines the torn cavity of the cerebrum and incloses the coagulum; in the next place, the coagulum may be gradually absorbed, leaving a cyst replete with serum; in the third place, this serum may be absorbed, the parietes of the cyst approach, adhere, and the cyst is obliterated, nothing but a cicatrix remaining!

158. I have already noticed the operations of Nature, in conducting the pus of hepatic abscess to the surface, and in ultimately discharging it from the system. See § 119.

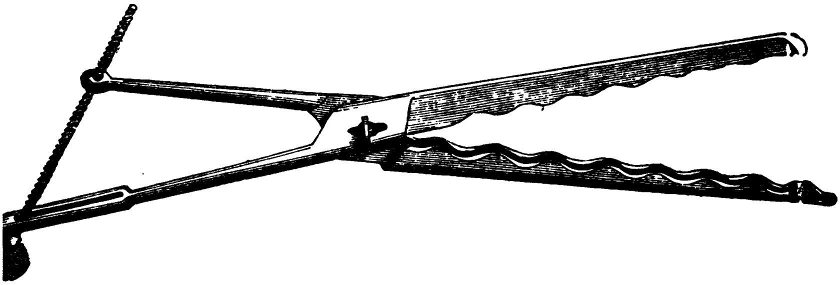
159. Another fact, of equal interest, is that of Nature's operations in the formation of *artificial anus:* the peritonæum lining the abdomen, and the peritonæum covering the intestine, unite by layers of effused albumino-fibrine; the strangulated portion of the intestine sloughs, but the abdominal cavity is safe! the patient is not destroyed; but he is left a prey to a loathsome malady. We shall see how art, guided by genius, completes what Nature had begun!

160. The cure of artificial anus was devised by Dupuy-

tren. The state of the intestine, in that affection, is thus represented by that distinguished surgeon:



161. The instrument by which Dupuytren contrived to effect the cure, is pourtrayed in the subjoined wood-cut:



162. It will be observed that one of the blades of this instrument is received into a groove in the other; its edge is dull, indeed one line in breadth, so that the intestine is held and *crushed*, not *severed*, when seized by it. The first blade is passed into the upper, the second into the lower portion of the intestine, and it is gradually but firmly closed. The adjacent parts of the peritonæum *unite* by albumino-fibrinous exudation; the textures seized by the instrument *slough;* the cavity of the abdomen is preserved entire, whilst the canal of the intestine is made continuous! The external wound is healed when the passage of the fæces has become free! All this is admirable!

163. The cure of hydrocele (ὕδωρ, *water*, κήλη, *a tumor*) is effected by changing the form of inflammation in the tunica vaginalis, from that which pours out serum to that which pours out lymph. Sometimes the cavity is obliterated

by adhesions; sometimes its internal surface is changed by the deposit of lymph, or by the condition of the vessels. This change is induced by some proceeding which excites a higher degree of inflammation: by an injection, by a seton, by removing a portion of the peritonæum, &c.

164. Another application of the principles of inflammation to the cure of a distressing malady, was proposed by myself, and successfully made by Dr. Heming. The object was to cure *prolapsus uteri.* It occurred to me that this might be accomplished by diminishing the calibre of the vagina, so that the uterus might be supported in its place at its upper part. The vagina, being lined by mucous membrane, could not be readily excited to contract adhesions with itself; I proposed, therefore, to remove one or two slips of that membrane, and draw the opposite edges into contact by suture; adhesion would take place, the canal would be firmly contracted, and the prolapsus of the uterus prevented. All this was effectually accomplished in one case, the details of which I gave in the Medical Gazette[1]. Several years afterwards, the case was examined by Mr. Vincent; the uterus was still retained in its proper position. Recently, this operation has been successfully repeated by M. Velpeau and M. Bérard, jun. In the young, I would propose that the slip of mucous membrane removed from the highest part of the vagina be broader than that removed from below.

165. The object in this operation is to contract the vagina. It is accomplished by changing a mucous surface, opposed to adhesive inflammation, into a surface of another character on which this form of inflammation is readily excited. The operation has been designated by M Bérard, '*élytroraphie*' (ἔλυτρον, *vagina*, and ῥαφὴ, *a suture*).

166. There is one other application of the principles of inflammation to the cure of disease, which I also proposed some years ago, and must briefly notice in this place. It occurred to me that if I could change the vascular texture of certain forms of *nævus* into firm lymph or cicatrix, I should effectually cure that congenital disease. The plans which

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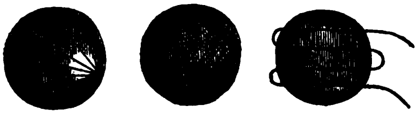
[1] Vol. xvii, page 266.

I proposed, in order to accomplish this object, are represented below:



The circle to the left represents a nævus punctured from one point, in various directions, by means of a needle of considerable size, with cutting edges; the middle circle represents a nævus absolutely *divided* by two operations; the third, a nævus pierced in several parts by a needle and thread, the latter being left to excite inflammation. Little pain is inflicted, scarcely a drop of blood is lost, no scar is produced; the deposit of lymph is effected very slowly; but it is only necessary to repeat the operation often enough, at due intervals, and to wait long enough for Nature's processes. The celebrated Professor Lallemand, of Montpellier, has quite recently proposed a precisely similar mode of proceeding: the *only* difference being that that gentleman suggests the propriety of leaving the needles themselves in the nævus, for a time sufficient to induce the deposit of lymph[1].

167. Such are some of the applications of the principles of inflammation to the cure of disease. The use of ligatures to arrest hæmorrhagy, to remove hæmorrhoïds, &c. proceeds upon similar principles.

XII. TREATMENT OF INFLAMMATION.

168. The principal *remedies* for *external* inflammation are—

1. *Blood-letting;*
    1. *General; venæsection; arteriotomy.*
    2. *Topical; cupping, leeches, scarification.*
2. *The Division of the part.*
3. *The Cold Lotion.*
4. *Cataplasms; fomentations.*
5. *Blisters; rubefacients.*
6. *The Nitrate of Silver.*

169. General blood-letting diminishes the force of the heart and arteries, and consequently the impetus of the

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[1] See the Med. Gaz. vol xvii, page 299.

blood; the minute arteries and veins are less distended and turgid, and the capillary vessels are proportionately relieved. Topical blood-letting relieves the minute and capillary vessels more immediately.

170. The *division* of the inflamed part is an exceedingly efficacious remedy in inflammation, when it can be performed, as in *inflammation of the tonsils*, *erysipelas*, *carbuncle*, &c.

171. The *cold lotions* subdue the action of the minute arteries; *cataplasms* and *fomentations* appear to act by relaxing the integuments and textures generally, and so diminishing the degree of *tension* in the inflamed part.

172. *Blisters* and *rubefacients* are principally applicable to cases of *chronic* inflammation, and are usually combined with rubbing, the use of the part, &c.

173. Lastly, the profession is much indebted to Mr. Higginbottom[1] for introducing to their notice a *new antiphlogistic* remedy, in the nitrate of silver. No remedy has so thoroughly sustained its reputation on trial. Lightly passed over and beyond the moistened surface of inflamed parts, as in paronychia, erysipelas, inflamed absorbents; wounds, punctured, lacerated, or bruised; the nitrate of silver acts in a manner quite extraordinary in subduing the morbid actions. Duly applied in variola, over and beyond the pustule, it prevents the sloughing which leads to the pitting sometimes so distressing in this disease.

174. The extent to which the curative influence of the nitrate of silver may be carried, and the modus operandi of this remedy, are still unknown.

175. In addition to these remedies for *external* inflammation, we must mention those which are more particularly required in cases of *internal* inflammatory disease. They are chiefly—

1. *Blood-letting.*
2. *Mercury.*
3. *The Tartrate of Antimony.*

176. The employment of blood-letting in internal inflammation is the most important act of the physician: *inefficient* and *undue* blood-letting are equally followed by serious, perhaps dangerous, consequences; the former leaves the dis-

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[1] On the Nitrate of Silver.

ease to commit its ravages unarrested, the latter plunges the patient into a state of debility, perhaps more calamitous than the original disease. This subject will be treated fully in a distinct chapter. The reader may also consult my work upon Blood-letting[1].

177. Next to blood-letting, mercury seems to be our principal remedy in inflammation, and especially in inflammation of the serous membranes of the larynx and trachea, and of the iris.

178. Recently, the Italian and the French physicians have introduced the tartrate of antimony, as a remedy in inflammation, and especially in *pneumonia* (πνεύμων, *the lung*).

179. These subjects will be treated fully hereafter. It will be my object especially to describe the *morbid* and *curative* effects of remedies: these effects of loss of blood will be fully detailed; but I have also seen mercury acting *kindly*, in some cases, and *as a poison*, in others,—effects which must be described with equal care. The same remark applies to other remedies. A work might be written upon this subject which would be of extreme value.

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[1] Observations on Blood-letting, founded upon researches on the morbid and curative effects of Loss of Blood.

CHAPTER II.

ON TUBERCLE.

180. After inflammation, Tubercle is the most important of the subjects comprised in the Theory of Medicine, —or Pathology.

181. Whilst inflammation frequently constitutes processes of reparation or restoration, and effects those purposes in the most marvellous manner, unaided, (§ 2; 119 et seq.) or directed by the skill of the surgeon (§ 156 et seq.), the tendency of tubercle is always destructive: it arises from a morbid condition of the system; and it issues in devastations of the part or parts affected, which, if internal, ultimately prove fatal.

182. It is true that inflammation frequently induces the effusion or secretion of serum and pus, which, being fluid, have no tendency to become organized; or the softening or ulceration of parts, which are destructive processes; but, frequently, instead of these, coagulable lymph or albumino-fibrine is deposited, and this substance generally tends to become assimilated with the living solids; the process is one of restoration, or of reparation. Some degree of softening, and actual ulceration, even, may, in this manner, be effectually remedied.

183. But in the case of tubercle, every thing tends to destruction, to disorganization: the tubercle itself, solid at the first, softens, liquefies; the organ in which it is situated, and the system at large, are involved in fatal changes.

184. This distinction between inflammation and tubercle and other morbid processes of a similar tendency, has been forcibly insisted on by Lobstein, who has expressed the two modes of action by distinct terms: the first he designates by the term *euplasy* (from εὖ, *good*, and πλάσις,

formation); it obtains in the formation of cicatrix; &c. the second he terms *cacoplasis* (from κακὸς, *bad*, and πλάσις); it leads to deposits which tend to softening and destruction: such are tubercle, melanosis, encephalosis, scirrhus, &c. The former is usually a topical affection; the latter arise from a morbid diathesis of the system, and invade several organs or systems simultaneously.

185. Tubercle is hereditary, and, doubtless, frequently congenital. It is heterogeneous (ἕτερος, *other*, γένος, *kind*)[1] from the living solid, and incapable of organization.

186. It is to the works of Bayle[2] and Laennec[3], of M. Louis[4] and M. Andral[5], and Dr. Carswell[6], that we are chiefly indebted for our knowledge of tubercle.

I. THE CAUSES OF TUBERCLE.

187. The causes of inflammation are principally external, and only occasionally constitutional; the causes of tubercle are almost invariably such as induce a morbid diathesis, a sort of cachexia (κακὸς, *bad*, ἕξις, *habit*), through the medium of which tubercle is generated. This diathesis is the result of

1. *Hereditary disposition.*
2. *Cold and damp soil, or air.*
3. *Insufficient food.*
4. *Insufficient clothing.*
5. *Insufficient exercise, air, or light.*
6. *The depressing passions.*
7. *Attacks of fever, inflammation, dyspepsia, &c.*
8. *The use of blood-letting, mercury, &c.*

188. To my account of the immediate *causes* of tubercles, I must add that of the *influence*,

1. *Of age;*
2. *Of sex;*
3. *Of season, &c.*

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[1] Compare homogeneous (from ὁμὸς, *like*, γένος, *kind*).

[2] Recherches sur la Phthisie Pulmonaire; Paris, 1810.

[3] De l' Auscultation Médiate, ed. Paris, 1826.

[4] Recherches sur la Phthisie; Paris, 1825.

[5] Clinique Médicale, ed. ii; Paris, 1829.

[6] Pathological Anatomy; London, 1834.

189. Innumerable painful facts prove the existence and influence of hereditary disposition to tubercle. The youthful members of a family are frequently affected with tubercles in succession: in one family, the disease may affect the lungs, in another, it may affect the mesenteric glands, in several individuals in succession. Tubercles have been found in the lungs of the fœtus.

190. Tuberculous disease is frequent in cold and damp situations. It is far less so on high mountains, as the Alps, and on sea-coasts. The late Dr. Wells has, however, adduced many interesting facts[1], which tend to prove that tuberculous disease is little known in localities in which intermittent fever prevails. He attempts to explain this fact on the principle "that the existence of one disease in the human body, or even a tendency to one disease, often renders it less susceptible of another[2]." Neither the northern parts of Europe and America, nor the temperate climates of France, Spain, Italy, and Greece, enjoy any immunity from this terrible disease. The inhabitants of the country are less subject to tubercles than those of towns, and especially than those of crowded cities.

191. It is a prevailing opinion that deficient food and clothing predispose to tuberculous disease. Dr. Withering stated in a letter to Dr. Beddoes, published in 1793, that butchers are exempt from consumption[3]. It is also generally admitted that the want of exercise and the privation of wholesome air, and of light, have the same baneful influence in disposing to this disease.

192. That the depressing passions have a similar influence, even when no predisposition to tubercular affection existed, I have recently, alas! had painful evidence, in the case of a near relative. Laennec observes— "parmi les causes occasionelles de la phthisie pulmonaire, je n'ai pas connu de plus certaines que les passions tristes, surtout quand elles sont profondes et de longue durée[4]."

193. Attacks of fever, of inflammation, of acute dyspepsia, have led to the development of tubercles; the exces-

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[1] Transactions of a Society for the Improvement of Medical Knowledge; iii, p. 471.
[2] Ibid, p. 513. [3] Ibid, 508. [4] Op. cit t. i, p. 646.

sive loss of blood, and the influence of mercury, have a similar baneful tendency.

194. In general, whatever impairs the strength, and the tone of the system, favours the formation of tubercle: whilst whatever invigorates and nourishes, operates as a preventive of this direful malady.

195. Such are the principal circumstances which promote, or obviate, the tendency to tubercle. There are two other conditions of the system which co-operate with this tendency:

196. The first of these is the youthful age of the patient. Tubercle has, indeed, been observed in the fœtus, in children of less than a year old, and in octogenarians[1]; but it occurs most frequently between the ages of fifteen and fifty. The following table, taken from Bayle, displays the mortality from *pulmonary* tubercle, in the different ages:

Ages.	Deaths.	Ages.	Deaths.
From 15 to 20 years	10	From 40 to 50 years	21
20 ... 30	23	50 ... 60	15
30 ... 40	23	60 ... 70	8
			100

197. This agrees very nearly with the subsequent observations of M. Louis[2], as set forth in the following table:

Ages.	Deaths.	Ages.	Deaths.
From 15 to 20 years	11	From 40 to 50 years	23
20 ... 30	39	50 ... 60	12
30 ... 40	33	60 ... 70	5
			123

198. Laennec simply remarks, in opposition to the statement of Bayle, that the female sex is more subject to pulmonary tubercle than the male. M. Louis[3] observes that, of the 123 patients of whom the several ages are given in the preceding table, 70 were women, and 58[4] men, and of

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[1] See Bayle, page 40, and Laennec, edition 1826, tome i, page 652.

[2] Recherches sur la Phthisie, p. 533. [3] Ibid, 522. [4] Here is a slight error.

43 patients who died of other chronic diseases, tubercles were found in the lungs of 25 women and of 15 men; the sums of these two series being 95 and 73.

199. *Season* would appear to have little influence on the development and progress of tubercle, if we may judge from the subjoined table of the deaths in 244 cases of phthisis, taken from Bayle[1]: of these

54 occurred in Spring, 64 occurred in Autumn,
68 .... Summer, 58 .... Winter.

II. THE APPEARANCES AND CHANGES OF TUBERCLE; THE GRANULATIONS OF BAYLE.

200. Tubercle, in its simplest and most usual form, consists of opaque bodies of a yellowish-white colour, of the consistency of very viscid pus, or of cheese, the particles of which have little cohesion,—varying in size from that of a millet seed to that of a pea or of a nut,—sometimes isolated and globular or oval, sometimes agglomerated into masses of various size and form, sometimes infiltrated into the tissue of the organ in which it is situated, and sometimes surrounded by a distinct cyst.

201. Tubercle occurs then under the following forms principally:

1. *The Isolated.*
2. *The Agglomerated.*
3. *The Infiltrated.*
4. *The Encysted.*

202. Tubercle appears to be a formation or secretion totally distinct or heterogeneous from any natural or morbid structure: it is inorganizable, and incapable, of course, of being injected; it is as a foreign body in the midst of the living solid, and there is a constant disposition, in that solid, to effect its solution and discharge from the body.

203. Bayle has described an appearance in the lungs which he has designated by the term *granulations:* he observes[2]: "The lungs are studded ("farcis," whence the term used by veterinarians) with miliary, shining, transparent

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[1] Op. cit. p. 43.

[2] Op. cit. p. 26.

granulations, sometimes marked with brilliant, black points or lines. These granulations appear of the nature and consistence of cartilage; their size varies from that of a millet seed to that of a grain of wheat; they are never opaque, and do not soften. By these characters, they are distinguished from miliary tubercles, which have the same magnitude, but are always grey, or white, and opaque, and which eventually soften completely."

204. Laennec[1] is of opinion that these granulations are the first stage of tubercle. M. Louis[2] is of the same opinion. M. Andral[3], on the contrary, contends that they are merely inflamed portions of the pulmonary lobules. We shall advert to this subject hereafter.

205. Tubercle appears to be a morbid *secretion*. Its size augments by the addition of fresh particles of the same kind. It at the first infiltrates the texture in which it is found; afterwards it becomes isolated from that texture, except in the case of diffused infiltration. It then becomes infiltrated itself, *softened*, and transformed into a puriform fluid. It acts as a thorn or other foreign body, inducing the secretion of pus in the textures by which it is contained. Eventually, like such other foreign body, it is, if possible, removed from the œconomy. It then leaves a cavity, an *ulcer*, which, in rare instances, contracts and cicatrizes.

206. Ordinary tubercles contain about 98 parts of animal, and 2 parts of saline, matter, viz. the muriate of soda, and the phosphate and carbonate of lime. In some cases, they undergo a *calculous* transformation, and they then consist of 3 parts of animal, and 97 parts of saline, matters. This calculous transformation is observed in the lungs, in the mesenteric glands, &c. It is opposed to softening.

207. Tubercles are principally developed in the cellular membrane of organs. They may be sub-mucous, subserous, intra-muscular: they may occur in the substance of the cerebrum and cerebellum, the liver, the spleen, the kidney, the testis, the absorbent glands, the bones, &c. Tubercle has been seen on the surface of mucous membrane, free

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[1] Op. cit. t. i, p. 537. [2] Op. cit. p. 2. [3] Op. cit. t. ii, p. 5; 28.

from ulceration; in the mucous follicles; and in the lymphatic vessels: in these, and some other cases, it is obvious that other textures besides the cellular membrane, had poured out tuberculous matter.

III. THE DIFFUSION OF TUBERCLE; IMPORTANT LAW OF M. LOUIS.

208. Whilst inflammation is frequently, nay generally, confined to one texture, organ, or cavity, tubercle is apt to be diffused,—to affect several textures and organs at the same time.

209. The degree of frequency in which tubercles occur in the different organs, is represented in the following table of M. Louis[1], which is founded upon 358 post-mortem examinations: tubercle existed in

The Lungs	in	ALL the cases except one.
— Small Intestine	—	one third.
— Large Intestine	—	one ninth.
— Mesenteric Glands	—	one fourth.
— Cervical Glands	—	one tenth.
— Lumbar Glands	—	one twelfth.
— Prostate	—	one thirteenth.
— Spleen	—	one twentieth.
— Kidneys	—	one fortieth.
— Cerebrum	—	one case only.
— Cerebellum		
— Spinal Marrow		
— Uterus		
— Urethra		

210. This table is full of interest, and deserves to be carefully *studied.* It is only in the lungs that tubercles exist *alone.*

211. The *left lung*, and the *upper* lobe, appear to be the most prone to the development of this disease: in *seven* cases, observed by M. Louis, in which the tubercles were *confined* to one lobe, they existed in the *left* lobe alone; in

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[1] Op. cit. Rapport, p. 4—5.

five; in the *right,* in *two* only. The grey granulations (§204), tubercles, cavities, are *all* more frequent, numerous and advanced, in the entire upper lobe, than in the lower lobe, but especially at its apex; the former is sometimes impermeable to the air, whilst the latter is still subservient to respiration. In 38 cases, M. Louis observed this fact 28 times in the left lung and 10 times only in the right. In 8 cases of *perforation* of the pleura, 7 were also observed in the left lung.

212. There are several questions of considerable interest still to be determined by future observation: a *first* is, in what proportion of the cases of phthisis are the tubercles *confined* to the lungs? a *second,* in what proportion of cases of tuberculous affection, is the disease *predominant* in the mesenteric glands? a *third* relates to the proportion of cases in which tubercle is *diffused* over many organs, surfaces, cavities, &c.

213. I shall now briefly state an important *Law,* and some important *facts* deduced by M. Louis from his observations upon this disease:

214. 1. M. Louis has ascertained, from the analysis and comparison of 358 cases, of which 127 were cases of death from phthisis, and 40 from other diseases, that *tubercles* never occur in any organ in the body after the age of fifteen, except in cases in which they also exist in the lungs.

215. 2. A second deduction of M. Louis is, that ulcerations of the epiglottis, the larynx, or the trachea, are not observed in any chronic disease, except phthisis (tubercles) and syphilis.

216. 3. A third deduction relates to the existence of ulcerations of Peyer's glands, which are only found, in chronic diseases, in connection with tubercles in the lungs.

217. 4. A similar deduction relates to chronic peritonitis, chronic from the beginning.

218. 5. A fifth deduction from the observations of M. Louis is, that the affection termed fatty liver, is almost exclusively a complication of pulmonary tubercle.

219. Such are the results of the original researches of M. Louis. They relate to ages beyond that of 15. M. Lombard has pursued the inquiry in reference to infancy and the earlier periods of life:

220. 1. Tubercles are very rare in the *fœtus*, and in the *early months* after birth.

221. 2. They become rather more frequent towards the age of *four* years; and exceedingly so from *four to five*.

222. 3. They again become less frequent after the age of *five* years to that of puberty.

223. 4. After puberty, tubercle again becomes more frequent, but in the *lungs* only.

224. It is further ascertained that tubercles are more diffused, and more frequently occur in other organs, without affecting the lungs, in infancy than in adult age. See § 210.

225. They also exist in the various organs in a different *proportion*: out of 100 cases, for instance, tubercles occurred in the mesenteric glands in 31, and in the intestines in 9. Compare § 210.

226. M. Andral has deduced from his own observations that men are more subject to tubercles from the age of 21 to that of 28, while females are more exposed to this disease *before* the age of 20.

227. M. Andral observes that *after* puberty the term tubercle becomes nearly synonymous with phthisis. I have, however, traced the symptoms and appearances of tuberculous disease in the abdomen, in many cases after the age of 15, and especially between that period of life and the age of 25. In one interesting case, the patient was 35.

228. There is one other observation which I have made: I have seen phthisis in several members of one family, and abdominal tubercles the predominant disease in those of another. So that not only the disease, but its form and seat, would appear to be derived from hereditary tendency.

IV. SIGNS AND SYMPTOMS OF TUBERCLES.

229. The *signs* of external tubercle are, principally, insidious and slow inflammation, suppuration and ulceration, followed by a red, indented cicatrix, and situated—1, in the absorbent glands,—of the neck, the groins, &c. 2, in the joints,—of the wrist, the ankle, the elbow, the knee, &c. and 3, in the bones,—of the finger, the arm, the leg, &c.

230. The further signs of this disease, are those of the tuberculous *diathesis*: the tumid, cracked lip; the red,

denuded eye-lid; the florid complexion; the precocious mind; &c. or similar appearances in other members of the family.

231. The *symptoms* of tubercles are very peculiar, and have not been sufficiently noticed by practical writers:

232. Before the stethoscope (στῆθος, *the chest*, σκοπέω, *to explore*) can detect the existence of tubercles in the lungs, the constitution of the patient frequently takes the alarm, and the functions of the circulation and of the respiration become slightly accelerated, or are easily hurried. I have frequently observed that, with a complexion which is apt to alternate between the pallid and the vivid, there is a degree of sensitiveness to cold, of susceptibility of the effects of heat, of breathlessness on moving quick or ascending a hill or staircase, and of cough; this cough is frequently slight, hacking, and dry, and scarcely or not at all observed by the patient or friends. In other cases, and especially in females, the countenance is pallid, with the slightest waxen or lemon hue, a tendency to blue lividity observed in the lips and at the roots of the finger nails, and a disposition to coldness of the extremity of the nose, the ears, and the hands and feet. These changes are frequently so insidious, that they are apt to be first observed, not by those who are in the daily habit of seeing the patient, but by some one who sees him after a certain interval and is struck by the change.

233. Even at this early period, I have frequently found, on inquiry, that the catamenia have ceased. And I would observe, that this cessation of the uterine discharges is generally, or at least frequently, complete at once; unlike the case of disorder of the general health, in which the flow becomes very slowly paler and more scanty, and, except in chlorosis, not ceasing altogether, and even in that disorder, generally very gradually. This is the more remarkable, because the condition of the uterus, under the influence of tuberculous disease, is one of great proneness to conception, a change which has, in its turn, a reflex action in arresting the progress of the tuberculous affection.

234. The fever which accompanies phthisis, like other symptomatic fevers, and unlike all pure and primary fevers, is frequently unattended by muscular debility, or by affection of the head, or of the digestion. There is no headache or

vertigo, and the patient often continues to walk or to ride to the last. There is a degree of feebleness and stooping observed in the gait, very early in the disease; and this remains little augmented, until the colliquative perspiration or diarrhœa bring with them their own debility and emaciation.

235. Tuberculous disease in the abdomen is greatly characterized by three symptoms: — 1, great tendency to coldness and lividity of the extreme parts of the body, 2, a frequent pulse, and 3, slow but progressive emaciation.

236. The aspect of the countenance is altogether peculiar, especially in cold weather, together with an obvious emaciation and expression of languor and disease; the end of the nose is livid in colour, and cold to the touch; and there is, in general, either paleness or a slight degree of flushing.

237. Similar observations may be made respecting the general surface. There is emaciation; the skin is soft, and apt to become moist, and there are generally perspirations during sleep, especially in the early part of the morning; to prevent this perspiration, the patient frequently endeavours to keep awake; there is an undue sensibility to cold observed on the slightest unexpected exposure,—as the opening of a door,—and the patient usually creeps over the fire; sometimes I have observed the back of the hands, and the fore part of the legs, to assume a peculiar brown colour, from being burnt by this constant exposure to heat; the hands and fingers are apt to be extremely livid and cold.

238. The mode of walking is peculiar, being attended by stooping, weakness, and caution. The pulse is always frequent, and generally regular. It is earlier and longer frequent, in tuberculous affection of the abdomen, than in that of any other cavity. I have known the pulse to be between one hundred and one hundred and twenty for several years. The emaciation in tuberculous disease of the abdomen is uniformly but very slowly progressive. It is accompanied by a state of unvaried debility; and in the later periods of the disease, by some œdema, generally observed more in one leg than the other. The catamenia simply become scanty, or cease, without undergoing the changes observed in some cases of disorder of the general health. There are altogether a peculiar appearance of the

countenance, a peculiar mode of walking, and a peculiar attitude and manner in general, all denoting debility and great disease; if to these be added the peculiar sensibility to cold, and tendency to coldness and lividity of the extreme parts of the body, the very gradual emaciation, and the habitual frequency of the pulse, it is scarcely possible to mistake the nature of this disease.

239. Tuberculous affection of the encephalon, can, I believe, only be suspected, and distinguished from insidious inflammation or the slow formation of tumours, by observing the concurrent existence of tubercles, or of some other strumous affection, in other parts of the body. Or, if there do exist symptoms which distinguish this morbid affection within the head, they have not hitherto been noticed with accuracy. It is in the case of suspected tubercles of the encephalon or spinal marrow that the law ascertained by M. Louis, §214, is so valuable: are these signs or symptoms of tubercles in the lungs? according as this question is answered affirmatively or negatively, is the probability that the case is one of tubercles of the other organ.

V. THE PREVENTION AND TREATMENT OF TUBERCLES.

240. This question is one of the deepest interest. That tuberculous formation has been prevented in some instances, and that it has been cured in others, is undoubted. The principles upon which these events have been effected are:

1. The removal of the *causes*.
2. The correction of the *diathesis*.

241. The modes of avoiding the causes of tubercles will be readily understood, by reverting to the enumeration of those causes, §188.

242. The second object seems to be best accomplished by the free exposure to the country air, or sea breezes;—by first stimulating the general surface of the body by sponging with salt water and using a coarse towel, and then by protecting it by flannel and proper clothing;—by keeping up tone and strength of the system, by an animal diet, regular exercise without fatigue, early hours, by frequent journeys, voyages, change of scene, total change of abode, &c.

243. In addition to these plans, the frequent, or steady, use of the quinine appears to me to be of great efficacy.

CHAPTER III.

ON MELANOSIS.

244. THE designation *melanosis* (μελας, μέλανος, *black*) was given by Laennec to a peculiar disease, which has recently greatly engrossed pathologists, but which is, in reality, of little importance to the practitioner: 1, it is a rare disease; 2, it is, in general, indetectible during life; and 3, if detected, it suggests no indications for the treatment. I will devote to it precisely that degree of attention which it appears to deserve, comparatively with the other subjects of this volume.

245. Melanosis consists generally of a deposit,—a *secretion*—of a dark colour, varying in shade from brown and other hues to deep black. It stains paper like Indian ink. It seems to consist principally of the colouring principle of the blood greatly modified.

246. Like tubercle, melanosis appears, as I have stated, to be a morbid secretion. It is inorganized, and incapable, of course, of being injected. It exists in masses, or patches, the forms of which are greatly modified by the texture and forms of the part in which it is deposited: it exists, therefore, sometimes in rounded portions, as in the lung, the liver, sometimes in lamellated or stellated portions, as in the intestines, or the surface of the serous membranes, &c. It is,

1. *Isolated.*
2. *Agglomerated, and of various size and form.*
3. *Infiltrated.*
4. *Encysted.*

247. It is usually of uniform texture. It is occasionally seen, in cysts and in the natural cavities, in the *liquid* form.

248. Like tubercle, the *size* of melanosis varies from that of a millet seed, to that of a pea, of an egg, of an apple;

and its *forms*, from the round, or oval, to the lobulated, induced by the intersection of portions of cellular membrane, — and to the perfectly irregular, induced by the various coalescence of minor masses.

249. Melanosis rarely undergoes the process of softening and expulsion; it then, however, leaves an ulcer or cavity, which may enlarge or contract, and ultimately cicatrize.

250. Like tubercle, melanosis generally exists in several organs simultaneously. It is most frequently found in the *lungs*. It occurs occasionally in the *liver*. M. Andral observes that it has not been observed in the *brain;* it has, however, been both described and depicted, by Lobstein, as occurring in the optic thalamus; and in the brain itself by Dr. Carswell. It occurs in the stomach and intestine; in the lymphatic glands; in the ovarium; in the subcutaneous cellular tissue; in the bones; &c. And it occurs in masses of encephalosis or scirrhus[1].

251. Unlike tubercle, melanosis is most frequent in advanced age.

252. The existence of internal melanosis is sometimes revealed by the appearance of similar deposits under the skin, through which the black colour is more or less distinctly or faintly discerned.

253. The *symptoms* of melanosis are very obscure: Laennec[2] observes that there is no fever, but emaciation, and dropsy of the extremities, and even of the serous cavities.

254. Of the remedies of melanosis nothing is known.

255. The subject of melanosis has been principally treated of by Laennec[3], Bayle[4], M. Breschet[5], M. Cruveilhier[6], M. Andral[7], Dr. Carswell, &c. M. Cruveilhier is of opinion that melanosis is formed in the capillary vessels or minute veins; Lobstein has depicted the matter of melanosis within a small vein[8].

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[1] Traité d'Anatomie Pathologique, tome i, page 460; and plate xiv, fig. 1 and 2.

[2] Op. cit. tome ii, page 30. [3] Op. cit. tome ii, page 26. [4] Op. cit. page 209.

[5] Journal de Physiologie, tome i, page 354.

[6] Anatomie Pathologique, Fasc. xix, xxii.

[7] Précis d'Anatomie Pathologique, tome i, page 446.

[8] Plate xiv, fig. 3**.

CHAPTER IV.

ON ENCEPHALOSIS, SCIRRHUS, &c.

256. I HAVE detailed the phenomena of the two most important subjects in the Theory of Medicine—Inflammation and Tubercle,—and have added a brief sketch of a subject of less moment, Melanosis. I now proceed to treat of Encephalosis and of Scirrhus, or of *soft* and *hard Cancer*.

257. Encephalosis, as its designation, encephaloid (ἐγκέφαλος, *the brain*, εἶδος, *likeness*), imports, resembles the medullary portion of the brain, both in consistency and colour.

258. Scirrhus, on the other hand, as its etymology implies, (σκίῤῥος, *hard*), is extremely hard, and of the consistency and colour of cartilage.

259. These two forms of disease, so apparently dissimilar, occur too frequently simultaneously, in the same organ, or in different organs, to be viewed as a distinct disease. It is probable, however, that they are not changed, or transformed into each other. They are rather variously mingled together.

260. Encephalosis is very vascular, and, if torn or cut, in the living subject, is very apt to bleed. It was designated by the term fungus hæmatodes (αἱματώδης, *bloody*), by the late Mr. Hey. It consists of a peculiar substance frequently interposed between the meshes of the cellular membrane, whence it obtains various lobular and other forms.

261. Scirrhus is less, or not at all vascular, and appears to consist, according to M. Andral[1], of the same cellular membrane, in a state of induration and hypertrophy.

262. These two forms of the disease are homogeneous. *Intermediate* forms, however, consist of admixtures of these

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[1] Anatomie Pathologique, tome i, page 498.

two substances in various manner and proportion. Scirrhus is frequently described as consisting of meshes, or cells, formed by hard, white, opaque bands, which contain, in the spaces formed by them, another of transparent and softer matter: it is true encephalosis and true scirrhus mingled together.

263. Encephalosis and scirrhus constantly tend to *enlargement*, to *ulceration*, to *multiplication*, to *diffusion*. It frequently happens, alas! that when an external fungus has been removed by the surgeon, the symptoms of the internal disease begin to manifest themselves.

264. This disease has a tendency to assume different forms in different organs: thus, it is generally fungous in the encephalon, tuberous in the liver, hypertrophous in the stomach and rectum. This rule is by no means constant, however.

265. The parts most liable to this disease are the eye, the encephalon, the lungs, the liver, the stomach, the rectum, the kidney, the testis, the lymphatic glands, the bones; but by no means in the precise order in which I have here enumerated them. It would be interesting to supply the want of numerical statements relative to the diffusion of encephalosis and of scirrhus in the different organs.

266. One fact is very remarkable: the encephaloid matter has frequently been detected in the *veins*, especially in the liver and the kidney[1]. It was discovered, accordingly, by M. Bérard[2], that an injection could be transmitted by the *arteries*, but *not* by the *veins:* in a case of cancer of the thyroid gland, it is said— "not a vein was injected, whilst the arterial injection penetrated every part of the tumor[3]." M. Cruveilhier concludes that encephalosis has its *seat* in the "capillary veins;" and that these become distended and form the cells in which the cancerous matter is contained[4].

267. There appears then to be, in this disease, the secretion of a peculiar substance of soft consistency; induration and hypertrophy of the cellular membrane; a disposition

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[1] See Cruveilhier's Anatomie Pathologique, Fasc. xii, p. 6, and xviii, pl. i.

[2] Ibid. [3] Cruveilhier, Op. cit. Fasc. xix. [4] Ibid, Fasc. xxiii, p. 4.

to the formation or deposit of the former in the veins: such are the facts we possess upon this subject, until the result of Mr. Kiernan's researches shall appear. The disposition to enlargement, by which injurious pressure is frequently induced,—to thickening of canals, by which obstruction is occasioned,—the disposition to pass into ulceration and to form fungus,—the disposition to become diffused in the animal œconomy, and to affect the system with a peculiar cachexia;—these are the terrific characters of this fearful malady!

268. In connection with the more ordinary forms of encephalosis and scirrhus, several others must be noticed: to the other textures, melanosis[1] is occasionally added; in some instances the disease assumes the areolar and gelatiniform appearance, from the deposit of a jelly-like substance, termed, by Laennec, *colloïde* (κόλλα, *glue*, εἶδος, *likeness*), in the meshes of the cellular membrane[2]. This last form of cancer is most frequently seen affecting the pylorus and adjacent part of the stomach,—and, next to this, the bones.

269. The symptoms in encephalosis and scirrhus, are, first, those which arise from injurious *pressure* upon the contiguous *organs;* secondly, those which arise from *obstruction* to *canals;* and thirdly, the state of *cachexia*, with straw-coloured complexion, emaciation and debility, &c. which frequently result from the influence of the disease upon the system at large. This interesting subject will be specially treated of hereafter. I will only add, in this place, that the organs compressed are frequently,

1. *The Trachea;*
2. *The Œsophagus;*
3. *The Aorta, or Carotid Artery;*
4. *The Jugular Vein;*

with appropriate symptoms, when the tumor occupies the sterno-clavicular region; and,

1. *The Rectum;*
2. *The Urethra;*
3. *The Vagina;*

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[1] Cruveilhier, Op. cit. Fasc. x.

[2] Ibid.

when it occupies the pelvis; and that the canal most apt to be obstructed is the alimentary, in various parts of its course, as,

1. *The Œsophagus;*
2. *The Cardia, the Pylorus;*
3. *The Ileum, the Colon;*
4. *The Rectum;*

with symptoms equally appropriate.

270. What shall I say about the treatment? Hitherto no cure is known for encephalosis or scirrhus. Extirpation is the other remedy; and this, for the reason mentioned § 264, is too frequently unavailing. However, it seems to prolong life, and mitigate present suffering. The only other remedy which has appeared to do good, is the perfect quiescence of the part affected: a plaster worn for years! has staid the progress of scirrhus of the mamma; whereas marriage, in one case, immediately developed scirrhus of the uterus, not suspected before. A blow has frequently been the exciting cause of encephalosis or scirrhus.

271. I must add a few words upon the subject of Cancer. This term, or carcinoma (καρκῖνος, *a crab*), is applied to many intractable and destructive ulcers, but especially such as result from encephalosis and scirrhus. It is frequently a question, especially in the contemplation of excision, whether a given ulcer be cancerous in this sense or not: when such ulcer is situated in the lip, in the tongue, for instance. Facts are wanting to solve this momentous question.

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272. Besides the diseases which I have just noticed, others will be treated of in the course of the subsequent pages, in connexion with the organs in which they appear principally: they are chiefly the encysted, the fibrous, the polypous tumors. It is only necessary, in this place, to point out the necessity for a strict diagnosis between these tumors and encephalosis and scirrhus.

CHAPTER V.

ON FEVER.

273. SCARCELY less important than the subject of Inflammation, is that of Fever.

274. The first question in reference to fever is this: can fever exist without some topical inflammation as its immediate or proximate *cause?* in other words, can fever be idiopathic (ἴδιος, *peculiar*, πάθος, *affection*) or primary? or is it always and necessarily symptomatic? (See § 15.)

275. Sydenham, Cullen, and other writers on medicine of the last and a former century, did not hesitate to establish an order of idiopathic fever; but their neglect of morbid anatomy prevents us from relying upon their opinions.

276. Recently two attempts have been made, one in this country, the other in France, to establish the localization of fevers.

277. Dr. Clutterbuck has contended that continued fever is, in fact, a peculiar inflammation of the brain; M. Broussais, that it is a "gastro-entérite."

278. On the other hand, M. Louis[1] has demonstrated that morbid changes in the encephalon and in the mucous membrane of the stomach and of the intestine, are *equally* frequent in other diseases, and in typhus fever; and M. Andral[2] and M. Louis[3] have proved, that the cerebral symptoms bear no relation to the detectible morbid appearances either in the encephalon or in the mucous membrane of the alimentary canal.

279. If, therefore, we be guided by the facts of the case,

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[1] Recherches sur la Gastro-entérite, t. i, p. 395, 181, 222; tome ii, p. 153, 155, &c. See especially p. 170—171.

[2] Clinique Medicale, ed. ii, t. iii, page 593.

[3] Ibid.

we shall conclude that fever is neither an encephalitis, nor a gastro-entérite.

280. M. Andral began the first edition of his Clinique Medicale with these observations: "Whether the idiopathic fever of nosologists can or cannot be considered as the constant result of a local affection, it seems proper, in the actual condition of the science, to designate this class of diseases by the term *Fevers;* in this manner we do not prejudge their nature, and we restrain ourselves to the strict observation of facts." Such is the opinion taught by M. Lerminier in his Lectures, who speaks of "*fever, continued or intermittent, with or without evident local affection of the organs of the head, chest, or abdomen.*"

281. I think it unfortunate that M. Andral has relinquished this mode of viewing the subject in his second edition. He is led into various difficulties and even contradictions: he constitutes a class, for instance, of "*Febrile* Diseases of the Digestive Tubes," with a *sub*-class of "Fevers *without* appreciable Disease of the Digestive tube;" and a second class of "*Apyrectic* Diseases of the Digestive Tube;" whereas peritonitis and other diseases in this class cannot be said to be without fever.

282. The opinion of M. Lerminier, and the original opinion of M. Andral (§ 281), is, indeed, the safest. Certain diseases form a class, and are termed fevers: their causes, nature, complications, mode of prevention and treatment, &c. become objects of investigation.

283. Having rejected the notions of Dr. Clutterbuck, M. Broussais, &c. in reference to inflammation of the encephalon, or of the mucous membrane of the stomach and intestines, as the essential cause of fever, I must now notice another subject of extreme interest: it has been shewn by MM. Petit and Serres[1], Bretonneau, Cruveilhier[2], Andral, but especially by M. Louis, that a peculiar disease of the clustered and solitary glands of the intestine, is the constant morbid appearance in *typhus.* M. Andral has, indeed, adduced a series of cases which he regards as exceptions

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[1] Traité de la Fièvre Entéro-Mésentérique; Paris, 1813.

[2] Op. cit. Fasc. vii.

to this conclusion; it is plain, however, that these are no real exceptions[1], but that, in fact, other diseases have been ranked by M. Andral as cases of typhus.

284. M. Bouillaud has renewed the controversy on the subject of the localization of fever, and of M. Broussais' success in accomplishing this object, by considering this disease of the glands of the intestines as a gastro-entérite and the local cause of fever.

285. This dispute is one of mere terms, if it be upon the question whether the affection of the glands of the intestine be a gastro-entérite, and of terms used in a very vague and general sense.

286. To those who still contend for the localization of fevers, I would put these questions: how do you view rubeola, scarlatina, variola, &c.? are these eruptive fevers symptomatic or consecutive and dependent upon the condition of the air passages, the posterior nares and fauces, the skin, respectively? or are these local affections, not the local *cause*, but simply part and parcel of the whole disease?— they are sometimes absent, or nearly absent, altogether! As you view these febrile affections then, so regard the synochus, and the typhus, fevers, of which I am about to treat; and there will be an end of all dispute. In the former of these, there is frequently no complication, except herpes (ἕρπω, *to creep*) oris; in the latter, the disease of the intestinal glands must be considered as bearing the same relation to the fever, as the pustules on the external and internal surfaces do to that of variola.

287. To prosecute this dispute any further, would be alike vain and unprofitable. It will be more useful to us, to learn to recognize these various diseases, to study every part, to watch for injurious or dangerous complications, and to investigate their *influence*, in their turn, upon the febrile symptoms, and upon the general system.

288. Such is a brief sketch of our present knowledge on the subject of fevers. I will now briefly state my own opinion:

289. 1. I consider that there is an order of fevers,

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[1] See the London Medical Gazette, for September 15, 1832.

induced by fatigue, anxiety, watching, and other similar causes, which vary with the age, sex, and constitution of the patient, and which may be *complicated* with local affection, but in which such local affection is by no means essential, as the *cause* of the fever. I shall call this order of fevers, which I shall describe very particularly hereafter, *Synochus*, or common fever from ordinary causes.

290. 2. There appears to be another fever, more peculiar in its causes, nature, symptoms, and morbid appearances, and in the persons whom it attacks, which is true *Typhus*. In this there is always disease of the glands of the intestines; and there are other morbid changes, less constant, and less essential.

291. 3. There is a third kind of fever, not less peculiar in its source, symptoms, morbid anatomy, and treatment, viz: *Intermittent*, or Ague; it is usually induced by marsh miasmata (*μίασμα*, from *μιαίνω*, *to pollute*), or effluvia, and it is apt to induce, in its turn, disease of the spleen, and dropsy.

292. This appears to me to be a simple view of a complicated subject. The question of the essential idiopathic or symptomatic nature of fever is resolved at once: synochus may exist with or without topical complication; typhus seems to have the same relation to disease of the glands of the intestines, as variola has to the pustules—to disease of the glands of the skin; ague is mysteriously associated with the function and condition of the spleen. In all this there is only fact; there is no hypothesis.

293. Chills, succeeded by heat of skin, flushing, frequent pulse, and, in the remittent and intermittent forms especially, by perspiration, are the principal symptoms of fever. The more continued fevers pursue their course *æquo tenore;* the remittent, and especially the intermittent, subside, and recur, at various intervals.

294. Throughout *all* fevers, the office of the physician is to watch and examine daily, for changes, for complications, and to meet them with prompt and efficient remedies. In *each* we are led from experience to expect and to anticipate particular complications: in typhus, we watch the condition of the head, the chest, the abdomen,—the intestine, especially; in ague, that of the spleen; in scarlatina, that of the throat and

fauces; in rubeola, that of the trachea and bronchia. The early and accurate detection of these complicatious,—*the Diagnosis*,—is every thing.

295. To ascertain the existence of fever, and of fever of a particular kind even, is easy, compared with the task of detecting early any complication which may occur, and against which, in fact, our most important remedies must be directed.

296. I have already noticed, § 61, 146, the difference between the general symptoms in inflammation, and the symptoms of fever. I beg my reader to refer to those paragraphs, in order that our space may be economized. In inflammation we have a permanent stimulus, by which the actions of the system are, at once, excited and sustained. In fever, we have, in the excited actions of the vascular system, a sort of fictitious strength; as we have, in the state of the nervous and muscular systems, a sort of fictitious debility: blood-letting soon induces syncope; but it is borne better eventually, than, from that appearance of debility, might have been expected.

297. The further description of the modes of *treatment* of fever must be left for the more extended and *practical* part of this treatise. The general *principle* of the treatment is stated § 294.

CHAPTER VI.

ON IRRITATION.

298. UNDER this title I wish briefly to notice a subject of great practical importance, but hitherto almost neglected by the profession.

299. Irritation consists in the presence and effects of some cause of pain and suffering, or in the more immediate effects of such a cause, should it have been removed. The irritation of a calculus in the hepatic duct, or in the ureter, is well known to occasion severe pain and a remarkable sympathetic affection of the stomach, viz. nausea and vomiting[1]. The introduction of a bougie into the urethra sometimes induces rigor and a complete febrile paroxysm, although it be immediately withdrawn. Uterine irritation is not less frequently or unequivocally the cause of extraordinary effects upon the system generally and upon various organs.

300. But of all the sources of sympathetic morbid affections, irritation in the stomach and intestines is the most common, the most important. Indigestible substances taken, and fæculent matters too long retained, are the frequent causes of that combined affection of the head and of the stomach, termed sick-headache, and of other and more acute sympathetic morbid affections, less recognized by the profession.

301. But as the mere presence of a calculus in the gall-duct is not always sufficient alone to induce an attack of

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[1] These two examples of irritation will be noticed more fully hereafter. It is only necessary to state, in this place, that the former is denoted by local pain, sympathetic sickness and vomiting, and sometimes icterus; whilst to the pain and sickness, in the latter case, are added a state of urine charged with animal matter, with a strong smell, high colour, and sometimes an admixture of blood. In either, a calculus, or calculi, may be expelled. Gentle percussion upon the part is, in these, as in many instances of disease, of the highest value in a diagnostic point of view.

pain and vomiting, so a deranged condition of the intestinal contents will not, alone, induce an attack of the morbid affection which I am about to describe ; in general, some superadded cause, some shock sustained, or some effort made by the system, is necessary to rouse into activity the cause of irritation otherwise dormant. In the same manner, indigestible substances may frequently be taken with impunity, when the health is unimpaired ; but if the system be under the influence of shock, or effort, or of nervous or vascular excitement, or of exhaustion, a cause of disorder, which might have been inert in other circumstances, proves of frightful activity. Intestinal irritation is, therefore, most frequently brought into action by a fall, or other accident, by serious operations, &c. One condition frequently involves *all* these causes: it is the *puerperal state.*

302. The *effects* of intestinal irritation generally begin in the manner of a sudden attack. This attack is usually ushered in by rigor, frequently by a more distinct and decided rigor than is observed in many cases of inflammation; the rigor is usually soon followed by much heat of surface ; with the heat the patient experiences some affection of the head, chest, or abdomen, and, indeed, frequently of all ; there are vertigo on raising the head, pain, and some morbid impression on the mind; panting in the breathing, fluttering about the heart, with general hurry, irritability, and restlessness ; the tongue is white and loaded ; the alvine evacuations are morbid,—dark-coloured, fœtid, scybalous,—or yellow like the yolk of egg,—or of the appearance of yeast; the urine is turbid and frequently deposits a copious sediment.

303. These affections are apt to occur in sudden attacks, and to recur in paroxysms,—perhaps varying their form,—and exciting great alarm in the patient and his friends, who usually despatch a hurrying message to the medical attendants.

304. The *complications* consist of affections *resembling,*

1. *Arachnitis;*
2. *Pleuritis ;*
3. *Carditis ;*
4. *Peritonitis.*

305. 1. The affection of the head consists of the most

acute pain, the utmost intolerance of light and sound, and the severest form of vertigo, wakefulness, and distress, and sometimes even delirium, and the pupils of the eyes are often extremely contracted.

306. 2. The affection of the chest is denoted by severe and acute local pain, which is apt to vary its situation, passing from one side to the other, or to the back, or occupying a situation higher up or lower down: this pain checks a deep inspiration, and even the ordinary breathing, to which it imparts a character of difficulty and anxiety.

307. 3. When the heart is the seat of this affection, there are violent and terrific attacks of palpitation, and the course of the carotids, and even of the abdominal aorta, is sometimes the seat of violent pulsation or throbbing.

308. 4. When the abdomen is affected, there are acute pain, and great tenderness under pressure, in some part, or more or less generally diffused. The attack and situation of the pain are such, in some instances, that the case is with difficulty distinguished from gall-stones, though it more generally resembles peritonitis.

309. I must again draw the attention of my reader very particularly to that source of diagnosis afforded by the effects of remedies; and particularly to the diagnosis between the class of complications of Intestinal Irritation resembling inflammation, from actual Inflammation itself. In the latter case, thirty, forty, and even fifty ounces of blood may flow before the slightest deliquium is observed: in the former there is frequently the most decided syncope on abstracting nine or ten ounces of blood! I have already alluded to this important subject; § 64; 146; 296. I shall have frequent occasion to recur to it in the subsequent pages, and in one chapter expressly.

310. A further diagnosis is afforded by the condition of the intestinal evacuations, as ascertained by the administration of copious warm-water enemata; &c.

311. The treatment consists in removing the source of irritation, by a gentle emetic, a gentle purgative, or an ample enema of warm water; and in calming the system by gentle, but effectual opiates.

CHAPTER VII.

ON EXHAUSTION.

312. Another subject almost overlooked by the profession is Exhaustion. This chiefly arises from loss of blood; but it may have its origin in undue lactation, in leucorrhœa (λευκὸς, *white*, ῥέω, *to flow*), &c. If the more immediate of these effects be well known, the more remote have been overlooked, or mistaken for other morbid affections. Yet to the physician the symptoms of reaction from loss of blood, so similar to those of some affections of the head, and of the heart, present subjects for his observation of the utmost moment in actual practice. The diagnosis of these cases is most important; the prognosis and the treatment alike depend upon it.

313. The *remote* effects of Exhaustion are particularly apt, from their similarity to inflammatory diseases, and from the present though transient relief conferred by the further detraction of blood, to deceive the unwary. It is highly important, therefore, to bear this distinction in mind.

I. THE IMMEDIATE EFFECTS OF LOSS OF BLOOD.

314. The most familiar of the immediate effects of loss of blood is syncope. In ordinary syncope from loss of blood, the patient first experiences a degree of vertigo, to which loss of consciousness succeeds; the respiration is suspended, affected by deep and repeated sighs, and then suspended as before; the beat of the heart and of the pulse is slow and weak; the face and general surface become pale, cool, and bedewed with perspiration; the stomach is apt to be affected with eructation or sickness. On recovery, there is perhaps a momentary delirium, yawning, and a return of consciousness; irregular sighing breathing; and a gradual return of the pulse.

315. In cases of profuse hæmorrhagy the state of the patient varies: there is at one moment a greater or less degree of syncope, then a degree of recovery. During the syncope the countenance is extremely pallid, there is more or less insensibility, the respiratory movements of the thorax are at one period imperceptible, and then there are irregular sighs, the pulse is slow, feeble, or not to be distinguished, the extremities are apt to be cold; the stomach is frequently affected with sickness, and this is followed by an apparent amelioration.

316. In cases of fatal hæmorrhagy there are no ameliorations. The symptoms gradually and progressively assume a more and more frightful aspect: the countenance does not improve, but becomes more and more pale and sunk; the consciousness sometimes remains until at last there is some delirium; but every thing denotes an impaired state of the energies of the brain; the breathing is audible as in ordinary breathlessness, stertorous, and at length affected by a terrible gasping; there may be no efforts to vomit; the pulse is extremely feeble or even imperceptible; the animal heat fails, and the extremities become colder and colder in spite of every kind of external warmth; the voice may be strong; there are constant restlessness and jactitation; at length the strength fails, and the patient sinks, gasps, and expires.

317. Besides syncope, there are other immediate effects of loss of blood. These are,

1. *Convulsions;*
2. *Delirium;*
3. *Coma;*
4. *Sudden Dissolution.*

318. 1. Convulsion is, after syncope, the most familiar effect of loss of blood. It constitutes one species of puerperal convulsion, and should be accurately distinguished from other forms of this affection, arising from intestinal or uterine irritation, or an immediate disease of the head or spine.

319. 2. Delirium occurs as an immediate, as mania occurs as a more remote, effect of loss of blood.

320. 3. We may be called to patients so perfectly comatose, immediately after blood-letting, or hæmorrhage, that we may be in doubt for a time whether the case be not apoplexy.

The history, the state of the countenance, of the pulse, of the beat of the heart, and of the extremities, and the other symptoms will, after a little watching, make the case clear to us.

321. 4. Sudden death has occurred from misapplied blood-letting. For an account of the circumstances in which this is apt to take place, I must refer to the work already quoted more than once, viz. Researches on Blood-letting, page 46 ; and to the Lancet, vol. xi, p. 94.

II. THE MORE REMOTE EFFECTS OF LOSS OF BLOOD.

322. The more remote effects of loss of blood are induced by repeated detraction of blood, or continued hæmorrhagy, and consist in,

I.—*Sickness and Vomiting.*
II.—*Excessive Reaction ; sometimes with*
  1. *Delirium ; Mania ; or*
  2. *Coma ; Amaurosis ; or Deafness.*
III.—*The Sinking State.*

I. SICKNESS AND VOMITING.

323. Sickness and vomiting constitute a very frequent remote effect of loss of blood or other source of exhaustion ; every thing taken, food or medicine, is apt to be rejected, either immediately, or on assuming the erect position. Eructation and hiccup are frequently conjoined with the sickness. The treatment consists in the administration of the mildest food, of ample enemata of warm barley-water, of gentle stimuli, gentle opiates, &c.

II. EXCESSIVE REACTION.

324. *The Symptoms.* Excessive reaction is formed gradually, and consists, at first, in forcible beating of the pulse, of the carotids, and of the heart, accompanied by a sense of throbbing in the head, of palpitation of the heart, and eventually perhaps of beating or throbbing in the scrobiculus cordis, and in the course of the aorta. This state of reaction is augmented occasionally by a turbulent dream, mental agitation, or bodily exertion. At other times it is modified by a temporary faintness or syncope. There is also sometimes irregularity of the beat of the heart and of the pulse. The respiration is apt to be frequent and hurried, and attended with alternate panting and sighing ; the move-

ment of expiration is sometimes obviously and singularly blended with a movement communicated by the beat of the heart; the patient requires the smelling bottle, the fan, and the fresh air. The skin is sometimes hot; and there are frequently general hurry and restlessness. In this state of exhaustion, sudden dissolution has sometimes been the immediate consequence of muscular effort on the part of the patient, or of his being too suddenly raised from the recumbent into the erect position.

325. In the more exquisite cases of excessive reaction, the symptoms are still more strongly marked, and demand a fuller description. They consist in affections *resembling*,

I. *Arachnitis;*
II. *Carditis.*

326. I. The beating of the temples is at length accompanied by a throbbing pain of the head, and the energies and sensibilities of the brain are morbidly augmented; sometimes there is intolerance of light, but still more frequently intolerance of noise and of disturbance of any kind, requiring stillness to be strictly enjoined, the knockers to be tied, and straw to be strewed along the pavement; the sleep is agitated and disturbed by fearful dreams, and the patient is liable to awake or to be awoke in a state of great hurry of mind, sometimes almost approaching to delirium; sometimes there is slight delirium, and occasionally even continued delirium; more frequently there are great noises in the head as of singing, of crackers, of a storm, or of a cataract; in some instances there are flashes of light; sometimes there is a sense of great pressure or tightness in one part or round the head, as if the skull were pressed by an iron nail or bound by an iron hoop.

327. II. The action of the heart and arteries is morbidly increased, and there are great palpitation, distinct "bruit de scie," under the ear or the stethoscope, and visible throbbings of the carotids, and sometimes even of the abdominal aorta, augmented to a still greater degree by every cause of hurry of the mind or exertion of the body, by sudden noises or hurried dreams or wakings; the patient is often greatly alarmed and impressed with the feeling of approaching dissolution; the state of palpitation and throbbing are apt to be changed, at different times, to a feeling of syncope; the

effect of sleep is in some instances very extraordinary — sometimes palpitation, at other times a degree of syncope, or an overwhelming feeling of dissolution; the pulse varies from 100 to 120 or 130, and is attended with a forcible jerk or bounding of the artery.

328. Exhaustion with reaction has, I am persuaded, frequently been mistaken for inflammation or other disease of the head or of the heart. Under this impression recourse has frequently been had to the further detraction of blood by the lancet. And the effect of this practice is such as greatly to impose upon the inexperienced,—for all the symptoms are perhaps greatly relieved by the induction and temporary substitution of a state of syncope.

329. It seems only necessary to refer to the occurrence of *delirium*, *mania*, *coma*, and *amaurosis*, as effects of exhaustion from loss of blood. They are distinguished by being traced to their *cause*. The first frequently occurs, either as transient delirium or as more permanent mania, as a puerperal disease. Coma, amaurosis, and deafness, have occurred from similar causes, and under similar circumstances. They must be cautiously distinguished from similar symptoms resulting from cerebral inflammation or congestion.

330. This subject will be pursued hereafter in reference to particular forms of disease,—meningitis, carditis; puerperal mania, &c. The *treatment* consists in the persevering observance of quiet, the recumbent position, &c. in mild opiates, stimuli, diet, aperients, enemata, &c.

III. THE SINKING STATE.

331. This term is adopted not to express a state of negative weakness merely, which may continue long and issue in eventual recovery, but to denote a state of positive and progressive failure of the vital powers, attended by its peculiar effects, and by a set of phenomena very different from those of exhaustion with reaction.

332. If in reaction the energies of the system are augmented, in sinking the functions of the brain, the lungs, and the heart are singularly impaired. The patient is no longer affected by noises as before; there is, on the contrary, a tendency to dozing, and gradually some of those effects on the muscular system which denote diminished energy of the

brain supervene, as snoring, stertor, blowing up of the cheeks in breathing, &c.; instead of the hurry and alarm on awaking observed in the case of excessive reaction, the patient, in the state of sinking, requires a moment to recollect himself and recover his consciousness; he is perhaps affected with slight delirium, and he is apt to forget the circumstances of his situation, and, inattentive to the objects around him, to fall again into a state of dozing. Not less remarkable is the effect of the state of exhaustion with sinking on the function of the lungs; indeed, the very first indication of this state is, I believe, to be found in the supervention of a *crepitus* in the respiration, only to be heard at first on the most attentive listening, or by means of the stethoscope; this crepitus gradually becomes more audible and passes into slight ruttling, heard in the situation of the bronchia and trachea; there is also a degree of oppression, sighing, hurry, blowing, or catching in the breathing, inducing peculiar movements of the nostrils, of the lips or cheeks, or of the thyroid cartilage; in some cases there is besides a peculiar, catching, laryngal cough, which is especially apt to come on during sleep, and awakes or imperfectly awakes the patient. The heart has, at the same time, lost its violent beat and palpitation, and the pulse and arteries their bounding or throbbing. The stomach and bowels become disordered and flatulent, and tympanitic, and the command over the sphincters is impaired. The last stage of sinking is denoted by a pale and sunk countenance, inquietude, jactitation, delirium, and coldness of the extremities.

333. Extreme exhaustion from loss of blood leads to,

1. *Effusion of Serum or Blood within the Head.*
2. *Œdema of the Lungs, accumulated bronchial Secretion, and serous Effusion from the Pleura.*
3. *Serous Effusion from the Peritonæum.*
4. *General Œdema or Anasarca.*
5. *Tympanitic Distention of the Bowels.*

334. I have been as full, yet as brief, as possible in this description of Intestinal Irritation and Exhaustion. I was anxious that subjects so little understood should be fairly brought before the student: yet I was equally anxious not to devote an undue degree of space to them, however important.

CHAPTER VIII.

ON SINKING.

334. BESIDES the state of sinking, induced by the loss of blood and other direct sources of exhaustion, a state of things very similar not unfrequently occurs in the course of certain diseases. It is apt to take us by surprise; for it is sometimes very insidious, and sometimes sudden, in its mode of accession.

335. Mr. C * * * * *, aged forty, was affected with icterus and reiterated attacks of pain in the region of the stomach; these attacks, together with the remedies necessary to relieve them, gradually reduced the patient to extreme weakness and great emaciation. In this state he went to Leamington, and was apparently benefited by a course of the blue pill. At this period, feeling himself better than usual, he rose early one morning, dressed himself, and went down stairs, with the intention of agreeably surprising his friends. He was overcome by the effort, however, and became faint; he was then taken with chilliness; he was removed to bed, and became slightly feverish.—On the succeeding morning there was rigor, followed by great heat of skin, and a sense of tightness under the sternum.—On the next day there were slighter rigor, less heat, a degree of delirium, and then constant dozing;—in this state of dozing he continued for some hours,—no danger having been intimated by the physician in the morning, or felt by his friends during this sleep, from which they expected to see him awake refreshed. In the evening, when the physician arrived, the pulse could scarcely be felt, and the vital functions shortly afterwards ceased altogether!

336. Some diseases are apt to issue, even at a rather early period, in a state of sinking; in other cases, sinking

supervenes in the later stages of these diseases. This state seems sometimes to be the result of a direct influence of the disease in lowering the vital powers; sometimes the disease has subsided, but the state of sinking has continued and destroyed the patient; and sometimes the sinking has appeared to annihilate the morbid actions which constituted the disease, and thus to prove a *cure*, though a fatal one. In the latter cases, the physician, whose eye is fixed on the disease alone, and the friends of the dying patient, are apt, from the apparent truce in the actions or pains of the disease, to be led into a sanguine, but delusive, hope that the patient is better; —there is, perhaps, a degree of dozing, mistaken for a long-wished-for sleep, or some painful symptom has subsided, and the patient expresses himself as easier;—but there are some of the appearances or symptoms about to be described, which will not fail to undeceive the careful observer.

337. This subject has been treated, in the author's peculiar style, by Hunter, in his Chapter on *Dissolution*. It has also been noticed by Sir Henry Halford, in his valuable paper published in the Transactions of the College of Physicians, vol. vi, p. 398, republished in his Essays and Orations, and entitled, " *On the Necessity of Caution in the estimation of Symptoms in the Last Stages of some Diseases.*"

338. Hunter observes, " Death, or dissolution, appears not to be going on equally fast in every vital part; for we shall have many people very near their termination, yet some vital actions shall be good, and tolerably strong; and if it is a visible action, and life depends much upon this action, the patients shall not appear to be so near their end as they really are: thus, I have seen dying people, whose pulse was full and strong as usual, on the day previous to their death, but it has sunk almost at once, and then become extremely quick, with a thrill: on such occasions it shall rise again, making a strong effort, and, after a short time, a moisture shall probably come on the skin, which shall in this state of pulse be warm; but, upon the sinking of the pulse, shall become cold and clammy: breathing shall become very imperfect, almost like short catchings, and the person shall soon die.

339. " It would appear in many cases, that disease has

produced such weakness at last, as to destroy itself: we shall even see the symptoms, or consequences of disease, get well before death.

340. " Even when in the state of approaching death, we often find a soft, quiet, and regular pulse, having not the least degree of irritability in it, and this when there is every other sign of approaching death; such as entire loss of appetite, no rest, hickup, the feet cold, and partial cold, clammy sweats, etc[1]."

341. Sir Henry Halford remarks that, " It often happens at the latter end of some diseases, both of an acute and a chronic nature, that appearances present themselves of a very equivocal and delusive nature; with which the issue of the malady does not correspond. This is most frequently the case when the resistance of the constitution against the influence of the disease has been long protracted, or when the struggle, though short, has been very violent. Here, a pause in nature, as it were, seems to take place; the disease ' has done its worst,' all strong action has ceased, the frame is fatigued by its efforts to sustain itself, and a general tranquillity pervades the whole system. This condition of comparative ease, the eager wishes of friends misconstrue into the commencement of recovery, and the more readily so, as the patient himself being appealed to, to confirm their anxious hopes, having lost some of his sufferings, admits, perhaps, that he is better.

342. " I have seen this fallacious truce in four or five instances of inflammation of the brain, particularly where the membranes which cover it have been inflamed, producing phrenzy.

343. " In inflammation of the bowels generally, it is so notorious, that mortification often follows a cessation of pain, that I do not think it necessary to dwell upon this form of disease with a view of cautioning physicians; but in that partial inflammation of the intestines which a strangulation of a portion of it in hernia produces, how often have I had occasion to deplore the disappointment and broken hopes of relatives, who, having been made happy by the assurance of

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[1] Hunter on Inflammation, 4to. ed. 1794, pp. 504—508.

the surgeon, that he had reduced the protruded bowel, and that now all would be well, in only a few hours afterwards were doomed to lament the patient's death! It is an invariable rule with me still to consider life as in jeopardy, until the intestines shall have performed their functions again, all irritation having left the stomach, and the skin remaining universally and equally warm."

344. The diseases in which the state of sinking is most marked are, I think, typhus, delirium tremens, pneumonia, bronchitis, enteritis, and dysentery,—though many other diseases lead to this state, and especially some which consist in repeated attacks, each attack leaving the patient weaker than before, until they issue in sinking of the vital powers.

345. Amongst the first symptoms, coldness and lividity of the hands are frequently observed,—the livid colour disappearing imperfectly on pressure; the cheeks and nose are at the same time usually cool. There are often much general and indefinable suffering, distress, and restlessness; sometimes slight dozing, at others, slight delirium, and in some cases convulsion followed by coma; the breathing is sometimes imperfect, the inspirations sudden and *catching*—a fatal symptom; and I have, in some cases, observed the *crepitus* in breathing—also a fatal symptom—of which I have spoken, § 333, for some days even before there was any other decided symptom of sinking; the voice is frequently altered and rather husky; the pulse is small and frequent, and perhaps irregular; the motions are apt to be passed involuntarily, and sometimes there is tympanitis, or retention of urine:—it is usual for some distressing symptom, as delirium in phrenitis, cough in affections of the chest, and pain in those of the abdomen, to have ceased as the state of sinking has come on.

346. In typhus, sinking is very apt to occur in the later stages, and after undue exertion, as in getting and sitting up. Laennec observes, "in some subjects, peripneumonia proves fatal before it has affected one-fourth of the lungs,—a fact," he adds, "calculated, like many others, to prove that death is frequently owing more to the failure of the vital principle

than to the extent of the local disease[1]." In some diseases of the bowels, this state sometimes occurs *early* in their course. In such cases it has been usual to conclude that gangrene had taken place; but, on examination, no such appearance has been observed: the sinking state is, equally with gangrene, attended by a subsidence of the abdominal pain. There is a puerperal affection of the bowels, the course of which is similar. In two instances there were very severe attacks of pain; the surface became cold and livid, the voice changed, the breathing imperfect, the pulse frequent and small, and the patients expired with all the symptoms of sinking. On examination, there were no morbid appearances whatever. In one case of *suppression* of urine, the secretion was somewhat restored in the last stage, or sinking state.

347. In the more chronic cases leading to sinking, there are various slight efforts of reaction,—as flushes, and heat of skin; sometimes there is shivering, followed by heat; slight dozing, or delirium, catching, crepitus or labour in breathing, mucous cough, cold extremities, the eye being bedimmed by a film of mucus.

348. Sinking is sometimes induced by undue and inappropriate depletion; at other times it is the peculiar tendency or effect of disease. Altogether, especially in reference to the prognosis, and the reputation of the physician,—I regard this subject as of peculiar interest,—very imperfectly known,—and still requiring the most attentive investigation. I have here only pretended to offer hints and some materials for thinking, leaving the matter for future inquiry. Remedies seem to be vain.

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[1] Op. cit. ed. i, t. i, p. 168, § 201.

CHAPTER IX.

ON BLOOD-LETTING.

349. THE subject next in order, in treating of the Theory of Medicine, relates to the use of certain important remedies; and, amongst these, Blood-letting ranks pre-eminently as the first.

350. It is one of the most remarkable facts in physic, that if several patients of similar strength and constitution, but affected by dissimilar diseases, be respectively placed in the erect position and bled to deliquium, they will be found to lose very various quantities of blood. I have known a patient, not apparently very feeble, faint on losing four ounces; and I have known patients bear to lose fifty, sixty, and even seventy ounces of blood without syncope!

351. This fact, plain and simple as it is, with its rationale and practical applications, has, I think, been greatly overlooked.

352. Its rationale is to be found, I believe, in connection with an equally interesting fact, that different diseases induce in the constitution different powers or susceptibilities in regard to the effects of loss of blood. Each disease appears, indeed, to possess its own peculiar and intrinsic virtue in this respect; this is determined by placing the patient perfectly erect, and bleeding to incipient syncope: the quantity of blood which flows is the measure of the protective influence of the disease, in one class of cases, and of its influence in superinducing a susceptibility to the effects of loss of blood, in the other.

353. In cases in which it is doubtful whether the pain or other local affection be the effect of inflammation or of irritation, the question is immediately determined *by placing the patient upright and looking upwards, and bleeding to incipient*

syncope: in inflammation, much blood flows; in irritation, very little. The violence of the disease, the powers of the system, and the due measure of the remedy, are determined at the same time. *There is, in my opinion, no single fact in physic of equal importance and value, in the diagnosis of acute diseases and in the use of a powerful remedy.*

354. An interesting scale of diseases may be formed representing these properties. It would begin with congestion of the head, or *tendency to Apoplexy; Inflammation of the serous and synovial membranes* and of the *parenchymatous substance* of various organs, would follow; and, lastly, *Inflammation of the mucous membranes, of the skin, &c.* This part of the scale would be divided from the next by the condition of the system in health. Below this would be arranged *Fever*, the effects of *Intestinal Irritation*, some cases of *delirium*, *Reaction from loss of blood*, and disorders of the same class with *Hysteria*, *Dyspepsia*, *Chlorosis*, and *Cholera morbus.*

355. Persons in health and of moderate strength will generally faint, if bled in the erect posture, on taking fifteen ounces of blood. I have known seventy ounces to be taken in the sitting posture, in the tendency to apoplexy, without syncope! but the case is an extreme one. Patients with *Meningitis*, *Encephalitis*, *Pleuritis*, or *Pneumonia*, frequently lose thirty-five ounces of blood without fainting. In *Bronchitis*, little more is borne to be lost than in health. A stout person in *Fever* will frequently faint on losing ten, twelve, or fourteen ounces of blood. In *Intestinal Irritation*, with urgent symptoms even, the abstraction of nine or ten ounces of blood will generally induce deliquium. In *Delirium Tremens*, or *Puerperal Delirium*, the patient soon faints from loss of blood. The same thing is still more observed in those cases of violent reaction which arise from loss of blood itself. In *Dyspepsia*, *Hysteria*, and *Chlorosis*, the susceptibility to syncope from loss of blood is very great: and I have known a patient of good strength, affected with *Cholera*, faint on taking four ounces of blood, who had shortly before borne to lose nearly twenty ounces without faintishness, under the influence of *inflamed Mamma*. As cases of the diminished tolerance of loss of blood, I would also enumerate paralysis from *lacera-*

tion of the brain, and apoplexy from *concussion*, before reaction or inflammation be established. It must also be carefully noticed that cases of accident—that of fractured ribs, for example—do not bear the loss of blood like those of inflammation. Surgeons are very apt to err in such cases.

356. The practical application of these facts consists chiefly in their affording—

1, *A Rule for blood-letting, in all cases in which this measure is required to be fully instituted.*

2, *A Guard at once against inefficient, and undue blood-letting;* and

3, *A source of Diagnosis, in the fullest sense of this word.*

357. The rule is suited also to the *degree* and the *duration* of the disease; for, with each of these, its influence in inducing tolerance or intolerance of loss of blood is respectively augmented.

358. It is not less adapted to those most frequent of all events, *mixed* cases. Inflammation and irritation may be conjoined: for example, there may be mere nephralgia, or absolute nephritis, from calculus, or a mixed case involving both. There may be mingled intestinal irritation and inflammation. In each of these circumstances, the rule for blood-letting which I have proposed, adapts itself accurately to the demands of these various morbid affections, and to the actual strength and condition of the general system.

359. It is difficult to say whether more injury has been done by an undue or by an inefficient use of the lancet. In inflammation we must bleed fully. In irritation we must bleed cautiously. Inefficient blood-letting, in the former disease, and undue blood-letting in the latter, are alike dangerous or even fatal to the patient; from both extremes we are guarded by the rule which I propose. By directing the patient to be placed in the erect position, and bled to incipient deliquium, we shall often take much more blood than we should have ventured to *prescribe* to be taken in inflammation, and very much less than we might be disposed to direct, in irritation; and in both these cases the rule conducts us to the only safe mode of treatment.

360. And if much blood has flowed before syncope has occurred, we must suspect inflammation; if little, we must

suspect that, however similar the symptoms, the case is in fact of a different nature—perhaps irritation, perhaps exhaustion.

361. I have also found that, in every case in which early syncope occurs from blood-letting, the more remote effects of loss of blood, as reaction, or sinking, are also very liable to occur; and it is in these cases that sudden dissolution has followed the use of the lancet. There is, in every point of view, intolerance of loss of blood. The reverse of all this obtains in inflammation, which seems to be incompatible, to a certain degree, with the effects of loss of blood; these are, on the other hand, very apt to supervene as the inflammatory action subsides.

362. And here I would solicit the co-operation of the profession in the further investigation of this important subject. It is by the multitude of facts alone, that the propositions which have been stated can be established or corrected. With the view of obtaining these facts, I would propose that, in every case in which full blood-letting is to be instituted, the patient be placed perfectly erect in a chair, or in bed, and bled to the very first appearance of deliquium; the quantity of blood taken is then to be noted, and accurately registered in a table. The same thing is to be observed on each repetition of the blood-letting.

363. And that nothing may be left unattended to, which may throw additional light on the subject, I would propose to notice—1, the appearance of the blood, and 2, the effects of its abstraction upon the disease.

364. These various facts may be registered in the following manner:

Age and strength of the patient.	Disease, its stage and complication.	Quantity of blood taken.	Effects on the patient and disease.	Appearances of the blood.	Repetitions of the blood-letting.	Effects.

365. It is obvious that none but the most unequivocal cases should be thus registered. Cases, the diagnosis of which was not perfectly clear, would only add their own obscurity to the investigation.

366. It is equally obvious that the investigation proposed cannot fail to add useful facts, which will in their turn become useful guides to the physician. It is still true, as Celsus has observed,—"*nulla perpetua præcepta medicina recipit.*" To the young practitioner, however, I think the practice proposed will prove of great assistance; and if it preserve one from the bitter reflection, which too many have experienced, of having done too much or too little, I shall not esteem that my exertions in introducing it have been in vain.

367. I would observe, in conclusion, that I do not think it *safe*, in any case, to bleed to actual deliquium, in the *recumbent* posture. But there are few cases, if any, in which, if it be proper to bleed fully at all, danger can accrue from bleeding to the most incipient syncope, in the perfectly upright position. Besides, the *remedy* is at hand. It consists simply in laying the patient recumbent, and, if necessary, raising the feet and depressing the head.

368. It may become a question, whether the patient may, in a little time, be again placed erect, so as to re-produce a state of slight deliquium, and thus to add to the power of the previous blood-letting in subduing the disease. But I do not think a state of continued syncope free from danger. I have known it lead to delirium, or apparent sinking.

369. On the other hand, the influence of an opposite position, the head being placed extremely low, and the lower part of the body being very much raised, has not been sufficiently traced, in the various cases of the immediate or remoter effects of loss of blood.

370. Amongst the other objects of this "proposal," is that of collecting any modifications or exceptions, in regard to the rule which I have laid down. It cannot be imagined that it should be without exceptions. It is as important that these should be pointed out, as that the rule itself should be established. There are already two exceptions to the rule which I have proposed, which I would briefly mention. In some cases of fever requiring blood-letting, the patient cannot

support the erect position: in such a case, the arm must be first prepared; the vein should then be promptly opened; and then the patient should be gently raised and *supported* in the upright position, carefully avoiding all muscular effort. On the other hand, in the case of congestion of the brain from exhaustion, there is not such early syncope from blood-letting as might be expected; and yet it is obvious that the system cannot bear the loss of blood: I have known this to obtain in exhaustion from undue lactation.

371. It will also be an interesting question whether this rule, in its repetitions, besides excluding undue blood-letting on the one hand, and inefficient blood-letting on the other, does not secure the cure of the disease, with the least possible expenditure of the vital fluid.

372. It seems almost needless to allude to the case of early syncope from *timidity*. It is only necessary, to arrest the flow of blood, to lay the patient recumbent, and to wait until his timidity has subsided.

373. Two objections have been made in reference to this rule for the administration of blood-letting: the *first* is that in some cases not inflammatory, more blood might be taken than the patient could bear to lose, in order to institute the test; my reply is, that such cases are not *included* in my proposition, which only relates to cases in which blood-letting "*is required to be* FULLY *instituted;*" see § 356. The *second* is, that in some cases *more* blood ought be taken than would flow before syncope is induced. I greatly doubt this assertion; I think it replete with *peril;* but if it be true, let the patient be replaced in the recumbent posture,—wait a few minutes, and again let the blood flow; we have at least ascertained the state of tolerance of loss of blood, and this fact will *guide* us in determining *how much more* blood may be withdrawn; it is a fact *added;* it is *knowledge* substituted for what *must* otherwise be *ignorance.* See § 368.

374. I shall now throw the *results* of my investigation into this subject into the form of a table, for the sake of distinctness. No one *can* pass the eye over it without being impressed with the value and importance of the facts it displays, with the diagnostic, the guide, the guard, which it affords.

I. AUGMENTED TOLERANCE.

Represented by the mean quantity of blood which flows before incipient syncope.

i. *Congestion of the Brain.*

1. *Tendency to Aploplexy.*	℥XL—L.
2. *Apoplexy from Congestion.*	

ii. *Inflammation of the Serous Membranes.*

1. *Arachnitis.*	℥XXX—LX.
2. *Pleuritis.*	
3. *Peritonitis.*	
4. *Inflammation of the Sinovial membrane and of the Fibrous Textures of Joints.*	

iii. *Inflammation of the Parenchyma of Organs.*

1. *Of the substance of the Brain.*	℥XXX.
2. *Pneumonia.*	
3. *Hepatitis.*	
4. *Inflammation of the Mamma, &c.*	

iv. *Inflammation of the Skin and Mucous Membranes.*

1. *Erysipelas.*	℥XVI.
2. *Bronchitis.*	
3. *Dysenteria.*	

II. HEALTHY TOLERANCE.

This depends on the age, sex, strength, &c. and on the degree of thickness of the parietes of the heart, and is about .... ℥XV.

III. Diminished Tolerance.

I. *Fevers and Eruptive Fevers*	℥XII—XIV.
II. *Delirium Tremens and Puerperal Delirium*	℥X—XII.
III. *Laceration, or Concussion, of the Brain*	℥VIII—X.
IV. *Accidents, before the establishment of Inflammation*	
V. *Intestinal Irritation*	
VI. *Dyspepsia; Chlorosis*	℥VIII.
VII. *Cholera*	℥VI.

375. I have known persons speak boldly of taking twenty ounces of blood in fever, who would be struck with terror at the idea of withdrawing forty or fifty in apoplexy from congestion; and yet the former is a dangerous, the latter a safe, measure, comparatively. Both, however, must be *regulated* by the plan which I have proposed, to be free from every kind of danger.

376. Since these remarks were first published (in 1826), they have been fully and explicitly confirmed by Mr. Wardrop, in Lectures recently published in the Lancet (1834), and separately (1835)[1], in *similar* words, and, I am sorry to say, without acknowledgment[2]:

377. " In the last Lecture I endeavoured to impress on your minds more particularly three points: 1st. The peculiar incompressible state of the pulse which, in conjunction with other symptoms, indicates the propriety of general blood-letting; 2d. The importance of the *first bleeding*, and the almost insuperable difficulties which are to be often overcome when this first depletion has been too sparing; and, lastly, I endeavoured to point out the propriety of abstracting blood until a fainting state of syncope supervened, in all cases wherein venesection is decidedly preferable to local bleeding.

378. " You are now naturally led to inquire—What is this

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[1] On Blood-letting.

[2] See Medical Gazette, vol. xvii, p. 176.

quantity of blood which it is necessary to abstract at the first bleeding, in order to produce a state of fainting? Such, indeed, is the variety of the constitution of individuals,—such the difference in the severity of disease,—and such the difference of the period when called on to treat particular cases, that you will find, that whilst in some the pulse sinks after the removal of but a few ounces of blood, in others depletion must be carried to a great extent before syncope is produced.

379. " When employing venesection, and observing the indications which have already been pointed out in order to regulate its extent, it will be generally found that the quantity of blood which you are able to remove before fainting comes on, is, in fact, never more than is requisite for the cure of the disease. Hence a person in health usually faints from the loss of a comparatively small quantity of blood, whilst the same individual, after suffering but a few hours from active inflammation, requires to lose an almost incredible quantity,—a quantity essential for the cure of the disease,—before he falls into a state of syncope."—" A large quantity of blood may be taken away at the first bleeding before syncope is produced, whilst, at every succeeding operation, fainting comes on from the loss of a smaller and smaller quantity.

380. " If you are to be guided in the employment of blood-letting by the principles which I have been endeavouring to inculcate, you will readily conceive the differences in the quantities of blood which must be abstracted in different examples even of the same disease; and whilst, in some instances, you will be disappointed, from the smallness of the quantity which flows from the vein before syncope supervenes, you will in others be surprised at the extent to which it may be carried, and with the happiest results. Hence the difficulty of attempting to give anything like a precise idea of the quantity of blood which patients require to lose in the treatment of particular diseases.

381. " The state of fainting is to be considered as an index of the quantity of blood necessary to be removed for relief from the disease; and, as I have already said, you will always find that quantity to be in the ratio of the propriety and necessity of procuring it.

382. " There is a class of cases in which blood-letting is

often employed unnecessarily, and often too, perniciously. I allude to the common practice of bleeding persons immediately after an accident, or during an apoplectic or convulsive fit. In many accidents, more particularly where the head suffers, the first effects of the injury are a diminution or collapse of the vital powers; and if, under such circumstances, blood-letting be had recourse to, a still further diminution of the vital powers is produced. It is not until the powers of life have revived, or that a reaction has taken place, that you should, after severe injuries, employ blood-letting, and even then it ought to be had recourse to with great circumspection."

383. "In proportion to the violence of an apoplectic shock, so are the powers of life diminished: and hence, if the quantity of blood abstracted be regulated by the severity of the symptoms, in like proportion will it be hurtful by still further diminishing the vital powers. When a person is in a state of insensibility from an apoplectic fit, those around are too apt to urge the necessity of bleeding, conceiving that the loss of blood will cure the disease in the head, of which the fit is merely an effect or symptom."

384. "There are cases of plethora or congestion in the brain, producing a sudden loss of the intellectual powers and convulsions, in which too much blood can scarcely be removed to save life; but in such cases the pulse is strong, usually acquiring vigour whilst the blood is flowing from the vein."

385. "In cases where there are organic changes in the brain's structure, and when the sudden apoplectic attack is caused by some vessel of the diseased part giving way and pouring out blood, blood-letting is of no avail, and when had recourse to when the pulse is feeble, and the vital powers already are much diminished, it never fails to hasten the patient's death: therefore, in such cases, blood-letting ought to be resorted to with great caution."

386. It is not a little interesting to know that similar observations and similar inferences obtain in veterinary practice. For the following valuable note I am indebted to Mr. John Field, Jun. of Oxford Street.

Dear Sir,

The following are the replies to your questions, so far as I am able to give them :—

1. The symptoms which precede syncope from blood-letting, are sighing, restlessness, frequency and feebleness of pulse, accelerated respiration, sweating, &c.

2. I desire that blood-letting in acute inflammatory diseases be continued until the horse sighs.

3. Cases of acute pleurisy, and of acute inflammation of the laminæ of the feet, bear the loss of large quantities of blood at a time, and require frequent repetitions of the blood-letting.

4. In inflammation of the mucous membranes, or of the submucous tissue, much smaller quantities can be detracted.

5. Should inflammation of the mucous membranes be translated to the pleura, or, from continuity of inflammatory action, should pleurisy supervene to pneumonia, the pulse will suddenly indicate the necessity of blood-letting, and the horse will bear the loss of a large quantity of blood.

6. Fat horses do not bear the loss of blood so well as lean ones.

I remain,
Dear Sir,
Yours very truly,
JOHN FIELD, Jun.

294, *Oxford Street.*
October 29*th*, 1830.

387. In concluding this brief notice of blood-letting as a diagnostic, &c. I must adduce one of the most interesting cases I ever witnessed, and one of the most important in its results:—A gentleman, residing twelve miles from London, was taken with an affection of the head. I was sent for, and found on inquiry that he had been bled early, and that he had speedily fainted under the influence of loss of blood. The case was long one of great anxiety. Another physician was consulted. It was supposed to be '*ramollissement.*' Confiding in the diagnosis afforded by the *early* syncope, in the *early* stage of the disease, from blood-letting, I continued to hold out hope of recovery. The patient did recover! Now,

the hope I felt and held out, in this case, flowed almost entirely from the confidence I reposed in the diagnostic afforded by the event of the blood-letting!

388. A few days ago I was consulted by a medical friend in the Edgeware Road in the case of his wife; he feared peritonitis: there had been previous attacks of the same kind; there were great pain and tenderness of the abdomen; the tongue was loaded: I prescribed blood-letting in the upright position; the patient, though young and stout, fainted on losing eight ounces of blood! From this moment there was no obscurity in the diagnosis, no hesitation in reference to the treatment, no interruption in the recovery.

389. There is a final observation relative to the use of blood-letting: in all cases in which there is great tolerance of blood, it is *remedial* and *safe;* in all cases in which there is intolerance, it is proportionately of *doubtful efficacy*, and *replete with danger!* How long will the profession neglect a source of such valuable information? How long shall we have to lament the opposition of persons, Lecturers too[1]! who have never understood, never tried its value?—an opposition so feeble as not to deserve a serious refutation.

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[1] Medical Gazette, vol. xviii, p. 584.

CHAPTER X.

ON MERCURY.

390. I HAVE, in Chapters VII and IX, briefly detailed the morbid and curative effects of loss of blood; in this, I shall give a sketch of the similar effects of Mercury.

391. The principal morbid effect of mercury is that designated by Mr. Pearson, to whom we owe its detection, the *erethismus* (ἐρεθιζω, *to excite*) *mercurialis*. To this affection the late Dr. Bateman, the friend of Mr. Pearson, fell a victim, and that from the want of a prompt diagnosis! The first symptoms of this terrible affection occurred on the *ninth* day of the mercurial inunction; this was nevertheless continued to the *thirteenth!* Dr. Bateman observes, in the detail of his own case, given in the ninth volume of the Medico-Chirurgical Transactions, " It is evident that the features of the malady are not sufficiently known, even to the most enlightened members of the profession; for the failure on the part of the medical advisers, in the instance about to be related, to recognize its first symptoms, and the consequent repetition of the dose of the poison, after its first commencement, had nearly proved fatal."

392. The detail itself is full of interest: and not the least affecting part of the story is, that, eventually, the disease did carry off this able physician!

393. Mr. Pearson observes—" In the course of two or three years after my appointment to the care of the Lock Hospital, I observed, that in almost every year, one and sometimes two instances of sudden death occurred among the patients admitted into that institution; that these accidents could not be traced to any evident cause; and that the subjects were commonly men who had nearly, and sometimes

entirely, completed their mercurial course. I consulted Mr. Bromfeild and Mr. Williams upon this interesting subject, but they acknowledged themselves unable to communicate any satisfactory information: they had carefully examined the bodies of many who had died thus unexpectedly, without being able to discover any morbid appearances; and they confessed that they were equally ignorant of the cause, the mode of prevention, or the method of treating, that state of the system which immediately preceded the fatal termination.

394. "As the object of my inquiry was of considerable importance, I gave a constant and minute attention to the operation of mercury on the constitution in general, as well as to its effects on the disease for which it was administered; and, after some time had elapsed, I ascertained, that these sinister events are to be ascribed to mercury acting as a poison on the system, quite unconnected with its agency as a remedy; and that its deleterious qualities were neither in proportion to the inflammation of the mouth, nor to the actual quantity of the mineral absorbed into the body."

395. The erethismus mercurialis may come on at any period of the use of mercurial remedies. In Dr. Bateman, the first symptom occurred on the ninth day of mercurial inunction, with languor, fever, and, on the next morning, with violent and irregular beating of the heart.

396. Mr. Pearson observes—"The gradual approach of this diseased state, is commonly indicated by paleness of the countenance, a state of general inquietude, and frequent sighing:—the respiration becomes more frequent, sometimes accompanied with a sense of constriction across the thorax; the pulse is small, frequent, and often intermitting, and there is a sense of fluttering about the præcordia. In this early stage, the farther progress of the mercurial erethismus may be frequently prevented, by giving the camphire mixture with large doses of volatile alkali, at the same time suspending the use of mercury." And further—"the erethismus is characterized by great depression of strength, a sense of anxiety about the præcordia, irregular action of the heart, frequent sighing, trembling, partial or universal, a small, quick, and sometimes an intermitting pulse, occasional vomiting, a pale contracted countenance, a sense of coldness; but the tongue

is seldom furred, nor are the vital or natural functions much disordered. When these, or the greater part of these symptoms are present, a sudden and violent exertion of the animal power will sometimes prove fatal; for instance, walking hastily across the ward; rising up suddenly in the bed to take food or drink; or slightly struggling with some of their fellow patients, are among the circumstances which have commonly preceded the sudden death of those afflicted with the mercurial erethismus."

397. In Dr. Bateman's case it was remarked—"that the action of the heart and arteries, which was extremely feeble as well as irregular while awake, was so much more enfeebled during sleep, as to be in fact almost suspended, and thus to occasion alarming faintings and sinkings; so that it became necessary, notwithstanding the extreme drowsiness which had succeeded the long-continued watchfulness, to interrupt the sleep at the expiration of two minutes, by which time, or even sooner, the sinking of the pulse and countenance indicated the approaching languor."

398. "To prevent the dangerous consequences of this diseased state, the patient ought to discontinue the use of mercury; nor is this rule to be deviated from, whatever may be the stage, or extent, or violence of the venereal symptoms. The impending destruction of the patient forms an argument paramount to all others; it may not be indeed superfluous to add, that a perseverance in the mercurial course, under these circumstances, will seldom restrain the progress of the disease, or be productive of any advantage. The patient must be expressly directed to expose himself freely to a dry and cool air, in such a manner as shall be attended with the least fatigue. It will not be sufficient to sit in a room with the windows open; he must be taken into a garden, or a field, and live as much as possble in the open air, until the forementioned symptoms be considerably abated. The good effects of this mode of treatment, conjoined with a generous course of diet, will be soon manifested; and I have frequently seen patients so far recovered in the space of from ten to fourteen days that they could safely resume the use of mercury; and, what may appear remarkable, they can very

often employ that specific efficiently afterwards, without suffering any inconvenience."

399. To shew how little this affection is understood, even now, I quote the following short account, which may be compared with that given by Dr. Bateman: "Mr. ——, surgeon, and a West-Indian, called upon me to hold some conversation on his own case. He attributed his unhappy condition to a malignant fever, with erysipelas, during which there had been exhibited a great deal of calomel, as much as thirty grains at one dose, which cured him; but he thought it left him subject to a gastric affection, with chronic inflammation.

400. "However that may be, this is his present condition. On falling asleep, just at the moment when volition and sensibility cease, the involuntary motions also stop, with a sensation of death, under which he awakes generally convulsed.

401. "His medical friends have sat by him and watched him, and they have found that when sleep is overpowering him, the breathing becomes slower and weaker, the heart and pulse also fall low, and cease to beat as sleep comes on, and, after a short time, he awakes in tremor.

402. "This gentleman is very naturally in much apprehension that some of those attacks may terminate existence. But he is young, and I think the attack is essentially different from the case of angina pectoris. It presents to us a lively idea of what would result, were the involuntary nerves subjected to the same law with the nerves of sense and volition; for then sleep, by overpowering both, would be death![1]"

403. There is great similarity between the erethismus mercurialis and the effects of loss of blood, the extreme degree of chlorosis, and disease of the heart itself: in all, the peculiar effect of sleep, and the proneness to sudden dissolution, are the same.

404. The erethismus described by Mr. Pearson is not the only *morbid* effect of mercury. This remedy, instead of producing a kindly effect on the system and on the disease,

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[1] Bell on the Nervous System, ed. 1830, p. 148.

sometimes induces, a quickened pulse, with feverishness and general inquietude, a furred tongue, a harsh and intolerable feeling about the stomach and bowels, perhaps with sickness, perhaps with diarrhœa.

405. Each dose and every form of the medicine produces these painful and untoward effects, and we are frequently compelled to relinquish the use of our most important remedy.

406. In two recent instances, the first of inflammation over the caput coli, the other of inflammation of the right ovarium with ascites, the progress of the treatment was repeatedly interrupted by this unkindly action of mercurials. Their form was changed; they were omitted, and resumed repeatedly.

407. In other cases a single dose of the pilula hydrargyri, or of the hydrargyri submurias, induces a state of nausea and sickness, or of tormina with diarrhœa.

408. There is still another *morbid* effect of mercury, the *erythema*, or rather *eczema* (ἐκζέω, *to boil out*), *mercuriale*[1]. This affection will be described in a remote part of this volume. A *similar* rash is induced by opium, arsenic, and other substances; and by gastric irritation from various causes.

409. I shall now proceed to describe the curative influence of mercury. This medicine was first proposed, as a remedy for inflammation, by the late Dr. Hamilton of Lynn Regis. Its powers as a remedy in various inflammatory diseases have been more recently investigated by Dr. Farre.

410. Dr. Farre observes, in an interesting letter to Mr. Travers[2].—"We are mainly indebted to John Hunter for directing our attention to the action of the capillary arteries, a knowledge essential to medicine and surgery, considered as a science. To be able to present to the mind the actual condition of the capillary arteries of an inflamed organ, and the changes which are taking place at their extremities, is to know the disease; and to be able to alter, to regulate, and to

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[1] See Pearson, Op. cit. Bateman on Cutaneous Diseases, &c.

[2] Surgical Essays by A. Cooper, F.R.S. and B. Travers, F.R.S. ed. 2, 1818, p. 97.

controul that action by remedies, is to cure it. Whilst the principal tendency of that series of remedies, which we comprise under the received term, antiphlogistic, from general blood-letting downwards, is to diminish the force of the heart and arteries; it is in a peculiar manner the operation of mercury on the whole capillary arterial system to change its action, but not indefinitely. The gentlest action of mercury is to correct and restore the secretions proper to the alimentary canal to their natural condition, and, as by a charm, to dissolve the functional disorder of distant organs sympathizing with the first passages. This is an operation which so exactly accords with the intention of nature, that no morbid actions ought to result from the remedy itself when thus used. But it is quite another thing when it is necessary to arrest organic disease. The remedy itself produces a train of morbid actions. Not to dwell on what is well known, suffer me to direct your attention to the condition of the extreme arteries when fully excited by mercury. It is an erythema—an action which essentially weakens the cohesion of parts: but the adhesive inflammation is so exactly opposed to this, that both cannot be the result of mercurial action. From the moment that I commenced the study of morbid anatomy, I directed my attention to the adhesive inflammation, because it opened to my view the most usual process of disorganization of the viscera.

411. "I had been led, from repeated observation of the adhesive inflammation of various textures being cured by the mercurial action, to receive it as one of the *general laws* of its operation to change that arterial action on which the effusion of coagulable lymph depends, and consequently to arrest all the subsequent changes which flow from this process. Doubtless, there are exceptions to this general law. The class of tumors, properly so called, form an immense and lamentable exception to it; and scrofula, in the same proportion that it has impaired the restorative powers of the constitution, forms another not less considerable. The extent and duration of the adhesive inflammation itself, forms a third; for all reasonable expectation of success, even from the use of the most powerful remedy, is founded on, and pre-supposes a structure

perfect enough to effect the salutary changes; but it is the actual organization of the part which suffers by the continuance of this process, and thus unfits it to effect them."

412. "Is iritis an example of pure adhesive inflammation?—I consider that it is; for if the case be left to nature, this is its tendency and termination.

413. "Is the mercurial action an erythema or an adhesive inflammation of those parts on which it falls?—If the former, which I believe it to be, no two actions can be more opposed.

414. "Are sloughing ulcers cured or aggravated by the mercurial action in which the establishment of adhesive or phlegmonous inflammation is essential to the preservation of the part? Accept an example or two. Mr. B. was under mercurial action for a chancre on the glans penis; an erythematous inflammation surrounded the ulcer, and the part sloughed; contiguous portions of the glans died successively. As soon as this destructive inflammation was set up, the further use of mercury was suspended, and two ounces of the powder of the best Peruvian bark was given daily. The granulating process was established before the whole of the glans was lost. You know that mercury would never have occasioned the deposition of lymph, nor the organization of that lymph, so as to heal by granulation in this alarming case. A child was brought to me with one eye lost by slough, and the other inflamed, with nothing remarkable in its appearance except a small opaque yellowish spot on the cornea. A mild antiphlogistic treatment was prescribed; but just before the patient was dismissed, the mother told me that the child had some sores about the pudendum and nates. On examination several small ulcers appeared, all of which were in a sloughing condition. This served me as a key to the condition of the capillary arteries. The extract of the bark was freely given. In eight and forty hours every ulcer on the body had a clean surface. The ophthalmia declined, and the eye was saved. Need I ask you what would have been the effect of the mercurial action in this case?

415. "I have uniformly regarded the mercurial action as one of the most effectual means of arresting the disorganizing process of adhesive inflammation, whether of the iris or of any other texture of the body. To the liver in this

state of disease (hepatitis), it has been long applied, except that some have had their fears about commencing it too early, and through this delay have probably lost the opportunity of preventing suppuration. In cynanche trachealis it has been more recently used with success. In the last stage of marasmus, from nodes of the large bones, I applied it with success in 1805, and since that period, with equal success, to adhesive inflammation of the pericranium, both where it has been entitled, pseudo-syphilitic, and where it was neither syphilitic nor bearing any resemblance to syphilis; before and since that period, with marked advantage, in arterial congestion, and even in organic changes of the brain; in 1809, successfully in carditis from acute rheumatism, and since that period, in chronic carditis."

416. Mr. Travers remarks,—"Whether the mercurial action is always restricted to the state denominated erythema, and never advances to the adhesive stage of inflammation, is a point which I cannot take upon myself to decide." He adds,

417. "Since this paper was written, I attended an elderly lady, the subject of iritis of the right eye, cutaneous eruptions, and rheumatic pains, which yielded readily to a very slight ptyalism. Three weeks after the cure of the iritis, she was attacked with an inflammation, precisely resembling the former, in the left eye, and, notwithstanding a slight paralytic affection of the right side, I persisted in the plan before pursued, diminishing the quantity of mercury one half, and at the same time exhibiting a light tonic; the inflammation yielded as speedily as before.

418. "Whether sloughing sores are cured or aggravated by mercury, is an inquiry to which it is not difficult to reply, but which does not appear to me to be fairly connected with the question at issue. It will not be denied that ulcers often granulate, even luxuriantly, under the mercurial action. I have seen a rapidly destructive ulcer on the penis arrested by mercury, to which bark gave no check; but opium is a remedy on which I place more reliance in progressive sloughing."

419. The general result of my observations relative to the use of mercury in inflammatory diseases is this: conjoined with active depletion, it is invaluable—1, in acute in-

flammation, of the serous membranes, of the larynx, of the trachea, &c ; 2, in acute inflammations partially but not entirely subdued ; 3, in chronic inflammations uncomplicated with the tuberculous diathesis. Prompt and decided ptyalism must be produced, and kept up until the symptoms have subsided : I have seen meningitis, pleuritis, peritonitis, laryngitis, effectually removed by this important remedy.

420. I have thus given an account of the morbid and curative effects of mercury, in the words which I myself delight to read, viz. those of the authors who have written expressly upon the subject. I shall proceed, in the ensuing chapter, to treat of the similar effects of Antimony, and especially of the Tartrate.

CHAPTER XI.

ON THE TARTRATE OF ANTIMONY.

421. It is principally to Sig. Rasori, in Italy, and to Laennec, in France, that we are indebted for our knowledge of the powers of the Tartrate of Antimony in subduing certain inflammatory diseases, and especially pneumonia.

422. Laennec observes—"From the moment that I detect pneumonia, if the patient be in a condition to bear the loss of blood, I prescribe the abstraction of six or eight ounces from the arm. I rarely repeat the venæsection, except in cases in which there is disease of the heart, or the threatening of apoplexy, or other congestion of blood. I have even cured several cases of pneumonia, very rapidly, without having recourse to blood-letting; but I generally premise this remedy, as does also Sig. Rasori, except in cases of cachexia or debility. I regard blood-letting as a means of arresting the inflammatory orgasm, and of obtaining time for the action of the tartrate of antimony.

423. "Immediately after the blood-letting, I give a first dose of one grain of tartrate of antimony in two ounces and a half of infusion of orange flowers and half an ounce of syrup. I repeat the dose every two hours until six doses have been taken, and then, if the symptoms be not severe, and if the patient be disposed to sleep, I allow him a respite of seven or eight hours.

424. "But if the pneumonia be advanced, if the oppression be great, if the head be affected; if both lungs, or the whole of one lung, be inflamed, I continue the remedy until the disease be abated. If several of these morbid conditions be combined in the same case, I augment the dose to one grain and a half, two grains, or even two grains and a half."

425. Many patients experience neither vomiting nor purging. More frequently, however, they are sick twice or thrice, and have five or six evacuations during the first day, but the first day only. When *tolerance* of the remedy is established, according to the phrase of Sig. Rasori, it is sometimes necessary even to give mild aperients. It may, however, be necessary, on the contrary, to add syrup of poppy to the antimonial draught.

426. Sometimes the amendment in the symptoms, and in the stethoscopic signs, is obvious in the space of forty-eight, twenty-four, or even two or three hours. This amendment occurs at all periods of the disease; and it is always progressive. It is in this latter point of view that the advantage of the tartrate of antimony over blood-letting, even when repeated, is most marked.

427. Laennec gives a glowing account of the efficacy of this mode of treatment in pneumonia, and of its advantages over blood-letting. It is proper to add, however, that M. Bouillaud has recently denied this superiority.

428. Laennec adds,—" I continue the use of the tartrate of antimony as long as the tolerance of the remedy and the existence of the crepitant rattle continue. This tolerance sometimes continues during the convalescence, and the patient has a good appetite though he be taking six, nine, or even eighteen grains of the tartrate daily."

429. Laennec assures us that he has never witnessed any very painful or dangerous effects from this mode of giving the tartrate of antimony.

430. Laennec has tried the tartrate of antimony in other inflammatory diseases besides pneumonia:

431. 1. " In inflammations of the serous membranes, and especially in *pleuritis*, the antimony is rarely ' heroic,' and only when the disease is very acute. It subdues the inflammatory action; but when the fever and pain have ceased, the effusion is not absorbed more rapidly by its means;

432. 2. " I have not," adds Laennec, " tried the antimony in *peritonitis*, and I shall not readily do so, since the mercurial frictions carried rapidly to salivation, after one or two applications of leeches, appear to be the most successful remedy in this disease.

433. 4. " In forty-eight hours the tartrate of antimony removed a disease having all the symptoms of acute *arachnitis*. The same happy result was observed in three cases of acute *hydrocephalus*."

434. The *contra-indication* for this use of antimony is the *want* of *tolerance*, denoted by the continuance of sickness and vomiting, and of purging.[1]

435. I have thus treated of various subjects,—diseases and remedies,—which appeared to me properly to illustrate the *Theory* of Medicine. A full view of this subject would involve the consideration of

I. *The Anatomy,*
II. *The Physiology, and* } *of Organs.*
III. *The Morbid Anatomy,*

The first and second of these I must, however, suppose to be treated of elsewhere; the last I have associated with my account of individual diseases. I must now, therefore, proceed to the *Practice* of Medicine, as far as *diseases* are concerned, leaving the further treatment of the subject of *remedies* for the department of the Materia Medica.

436. In treating of each disease I shall revolve in my mind the following subjects:

I. *The Literary History.*
II. *The History, comprising*
  1. *The Causes,*
  2. *The Course.*
III. *The Symptoms.*
IV. *The various Forms and their Diagnosis.*
V. *The Complications, the Sequelæ, and their Diagnosis.*
VI. *The Treatment, the Effects of Remedies.*
VII. *The Prognosis.*
VIII. *The Pathology, the Morbid Anatomy.*

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[1] De l'Auscultation Médiate, ed. 2, t. i, p. 492, &c.

PRINCIPLES

OF THE

THEORY AND PRACTICE

OF

MEDICINE.

PART SECOND.

THE PRACTICE OF MEDICINE.

PART SECOND.

THE PRACTICE OF MEDICINE.

I. OF DISEASES OF THE GENERAL SYSTEM.

CHAPTER I.

ON FEVERS.

437. In a preceding part of this volume (p. 60), I have treated of Fever in a *theoretical* point of view; I now proceed to treat of Fevers quite *practically*.

438. Much difficulty has existed in regard to the division and arrangement of Fevers. I think the following view of this subject is replete with practical utility:

I. SYNOCHUS; or *Common Fever from common causes;* as fatigue, anxiety, watching, &c.

II. TYPHUS; or *Specific Fever from more specific causes;* as malaria, contagion? &c.

III. INTERMITTENT; or *Ague; from Marsh Miasmata* principally.

439. The object of every work like the present, must be to disentangle the subject of which it treats, from the maze of useless terms and distinctions, and to present it to the reader in its simplest and most practical form. There is no question in which this is so necessary as in that of fevers. There is none in which there has always been such discrepancy of opinion amongst physicians. I think, however, that

all continued fevers may be comprised under the two designations Synochus and Typhus, according to the preceding arrangement; whilst, to confound them under the single designation of Typhus, as is done by the late Dr. Bateman, is to involve the practical and real distinctions of fevers in insuperable difficulties.

440. Our task of diagnosis is, however, only half performed when we have ascertained the case to be fever—a special form of fever. The complications may, mediately or immediately, be the cause of death. If these be undetected, or undistinguished, the first part of the diagnosis will be unavailing. In the course of fevers, the early detection of a complication is therefore of the utmost moment. This will appear very obvious on reading the subsequent pages. It will also appear of the greatest importance to cultivate a habit of watching and of renewed examination, for such complications.

I. OF SYNOCHUS.

441. The term Synochus is used to designate the *common fever* of this climate, as it arises from ordinary causes. It was used in this sense by the late Dr. Willan[1]; and some term distinctive of such a form of fever from typhus is essentially necessary to the inquiry into the nature of fevers. It is that form of fever which is most frequently seen in *private practice*, amongst the middle and higher ranks of society; it is, comparatively, rare in *hospitals*.

442. Synochus varies exceedingly in persons of different ages and sex. The varieties of this fever may be classed in the following order:

I. *The Acute*, seen principally in the young and robust;
II. *The Protracted*, in the feeble and delicate, and in the female sex;
III. *The Typhoid*, chiefly in the aged and infirm.

443. The *acute* form of Synochus is the most frequent; in the heat of summer it is apt to be complicated with *bilious*

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[1] Miscellaneous Works, by Ashby Smith, M.D., London, 1821.

vomiting and diarrhœa, and yellowishness of the conjunctiva. The *protracted* Synochus frequently pursues the course of a "*slow nervous*" fever, for six, eight, or ten weeks. The *typhoid* Synochus is seen principally, but not exclusively, in the aged and infirm, after anxiety, fatigue, accidents, or surgical operations; it is of the utmost moment to distinguish it from the true typhus.

I. *Of Acute Synochus.*

444. I. *The History.* The acute Synochus arises from fatigue, anxiety, and watching, as in unremitted attendance on the sick; from long exposure to cold or rain, as in taking long journeys, or, as I have often seen, in the labours of the harvest; from extreme errors in diet, &c. It usually comes on immediately after exposure to one of these causes, with chilliness, febrile heat, flushing, &c. Its duration is from ten to one-and-twenty days.

445. II. *The Symptoms* enumerated more fully are the following:—Flushing and tumidity of the countenance, injection of the conjunctiva; heat, softness, and tumidity of the skin generally; the tongue is loaded, white, and generally moist, swollen, and indented; the breath tainted. There are aching pains, lassitude, and muscular debility; headache; intolerance of light or sound, and, in the erect posture, vertigo or faintishness. The respiration is hurried; the pulse frequent, full, and soft; there are anorexia and constipation.

446. III. *The Complications* usually seen in this affection are,

I.—1. *Herpes Oris*, and
  2. *Herpetic Sore Throat;*

but besides these, there is occasionally,

II.—1. *Encephalic*,
  2. *Thoracic*, *or*
  3. *Abdominal*, *Inflammation;*

and, in summer, there are frequently,

III. *Bilious Vomiting* and *Diarrhœa.*

447. IV. *The Treatment.* The first remedy required in

the acute Synochus is usually an emetic, which may consist of half a dram of the pulvis ipecacuanhæ, given in tepid, weak tea, administering some similar diluent both *before* and *after* it. The bowels should then be well moved by means of a pill of two grains of the hydrargyri submurias, and three of the pilula hydrargyri, followed by a draught, consisting of about twelve drams of infusum sennæ, and of two or three of confectio sennæ, and of the sulphas magnesiæ.

448. It frequently happens that, for the excessive febrile action, or for pain of the head, blood-letting is required: the patient should then have his arm prepared, the vein opened, and be placed in the perfectly erect position, looking upwards, and the blood should be allowed to flow until the face or lips turn slightly pale, the forehead be bedewed with perspiration, the breathing attended with sighing, the stomach with eructation, or the pulse become feeble, slow, or irregular.

449. The medium quantity of blood which will thus be withdrawn, is usually slightly above that denoting the healthy tolerance; see p. 85. If there be a complication of affection of the head, or of pleuritis, or pneumonia, that quantity will be *proportionately* greater. How valuable this fact is, in the diagnosis and further treatment of the disease, I need not repeat.

450. The pulvis antimonialis may now be given, in the dose of three grains, every three, four, or five hours, with a saline draught.

451. A mild aperient must be given daily.

452. The diet should consist of tea, barley-water, &c. only.

453. V. The *Complications*, whether of the head, chest, or abdomen, must be treated by repeated venæsection, or leeches, until the pain and other symptoms subside.

454. VI. *The Morbid Anatomy.* I have never known this form of Synochus to prove fatal; the morbid appearances are, therefore, unknown to me.

455. A vivid idea of this familiar morbid affection will be best given by an example:—A youth toils through the session at Edinburgh; then takes the mail for London; arrives heated and fatigued, but trusting that, by repose, his

feverishness and weariness will subside. Several days pass over, and these symptoms do not subside: the lips have become affected with herpes; there is sore throat, and, on examination, erythema, herpes, or aphtha is observed: there are still headache and vertigo, and perhaps coughing; there may be chills; the face is flushed, the skin hot, the pulse frequent, the tongue white and loaded, and the breath tainted; &c. These symptoms continue from ten to twenty days.

456. This febrile affection, and not typhus, is what I observe in the young gentlemen of an extensive drapery establishment, which is placed under my care. It may very appropriately be called *common fever from common causes.*

457. The harvest labourers are apt to become affected with this fever; there is frequently then the complication of bilious vomiting and diarrhœa, with slight icterus. Such a form of fever has been designated *bilious fever*.

458. An account of the acute Synochus will be found in Dr. Willan's Reports of the Diseases in London[1], pp. 148—150. Dr. Willan was in error in supposing that Synochus is confined to summer, or becomes changed in autumn, into typhus[2]. It is produced, at any season, by its appropriate causes; it is *modified*, however, by season, being conjoined with inflammatory affections, and especially pleuritis, in severe cold weather, and bilious symptoms, as I have stated, in hot; but it is always essentially different from typhus.

II. *The Protracted Synochus.*

459. I. *The History.* This form of Synochus comes on more slowly, and after a still more protracted exposure to the causes already enumerated; from disappointment and grief; from want and poverty, &c. Its duration is frequently protracted through six, eight, ten, or even twelve weeks.

460. II. *The Symptoms.* The countenance, occasionally flushed, at first, becomes shrunk, wan, sallow, and tremulous; the general surface shrunk, dry, harsh, and exfoliating; the hands are rough and harsh; frequently a circle of redness

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[1] Op. cit. p. 106.

[2] Ibid. p. 163.

and burning is observed extending round the palm; there are muscular tremor and debility, headache or vertigo, delirium or coma; the pulse becomes frequent and small; the respiration and the articulation are tremulous; the tongue becomes brownish and dry in the centre, or morbidly red, smooth and dry; there is sometimes vomiting or diarrhœa; the urine usually deposits a copious pinkish sediment.

461. III. *The Complications* most frequently seen in this form of the common fever, are,

I.—*Aphthæ of the Mouth and Throat.*
II.—*Chronic.*—1. *Cephalic,*
2. *Thoracic, or*
3. *Abdominal, Inflammation.*
III.—*Tubercles.*

462. IV. *The Treatment.* This affection comes on too insidiously to require the more active remedies recommended in the acute Synochus. § 446, 447. It must be treated, at first, with mild aperients, antimonials, salines, and diet. Asses' milk is peculiarly proper.

463. In due time, these remedies are to be exchanged for gentle bitters or tonics, as the infusum gentianæ compositum the infusum cinchonæ.

464. The state of the general surface frequently requires the use of ablution with tepid or warm water; that of the nervous system, the hyoscyamus, &c.

465. But the principal object in the treatment is, as in all fevers, to watch against the supervention of affections of the head, chest, or abdomen,—especially slow and insidious inflammation, or tubercle.

466. V. *The Morbid Anatomy* is totally unknown. The appearances found, post mortem, are usually those of the *complications* to which I have just adverted.

467. I have described, § 454, the usual mode of accession of the acute Synochus. I shall do the same in reference to the insidious and protracted form of this fever. In this manner the student and young practitioner will receive a more distinct impression of the character of this disease.

468. Thus, a young person of delicate constitution, shall attend the sick-bed of a parent, for example, incessantly, anxiously, night and day, until the patient recovers or sinks. At this moment the anxious nurse becomes affected with feebleness, feverishness,—the face is alternately pale and flushed, the tongue is white, the pulse frequent,—in a word a '*slow, nervous fever*' seizes the system, and the patient lingers in it for many weeks: there are emaciation, dryness of the skin, the load peels off the tongue, leaving it morbidly clean, perhaps beset with aphthæ; there may be constipation or diarrhœa.

469. There is a slight sketch of this form of fever in Willan's Reports, already quoted (§ 457), p. 132, 126. Dr. Willan describes one case as terminating fatally, from intestinal hæmorrhagy, about the twentieth day.

III. *The Typhoid Synochus.*

470. I. *The History.* The causes of the typhoid Synochus are similar to those of the other forms of this fever; but the subjects are, usually, the feeble, the aged, females, &c. This affection is apt to supervene upon accidents and operations.

471. II. *The Symptoms.* In typhoid Synochus, the surface is less heated, the tongue becomes brown and dry, and the teeth affected with sordes, and there are delirium, coma-vigil, or subsultus; but there is rarely purpura, or tympanitis, and never the rose-spots[1], so frequently observed in true typhus.

472. III. *The Morbia Anatomy.* This is not distinctly ascertained. There is an absence of the ulcerations of the clustered intestinal glands, which appear to constitute the essential anatomical character of true typhus.

473. IV. *The Treatment* of the typhoid Synochus is extremely similar to that of the protracted Synochus. To the remedies employed in the latter form of the disease, §461, may be added, however, *wine*, cautiously administered.

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[1] Examen de l'Examen de M. Broussais, par P. Ch. A. Louis; p. 115.

474. I shall now present my readers with an interesting case of typhoid Synochus. It was published in the Medical Gazette, vol. x, p. 756.

475 The patient, in the seventh month of pregnancy, suffered from great anxiety, fatigue, and watching, during the illness of two little children, for upwards of a week. She then became affected with a violent hysteric paroxysm, febrile symptoms, and delirium. These affections augmented daily; the tongue became dark-brown, and dry; the teeth covered with sordes; the pulse frequent, then losing its force; the delirium more and more violent, and continuous. The powers of life at length failed. I had expressed my opinion that the case, however *typhoid*, was not real typhus. An examination was made, in the most accurate manner, by Mr. Hammond and Mr. Crowdy, of Brixton, Mr. Heming of Kentish Town, and myself. The brain was free from effusion, or morbid appearance of any kind; so were the viscera of the thorax. The stomach and small intestines, and the colon, were free from any mark of disease; there was no affection of the clustered glands whatever; the only morbid structure consisted, in a very few instances, of inflammation, with minute central ulcer, in the solitary glands, occupying a small space at the uppermost part of the rectum. There were no petechiæ, nor was there the least tympanitic affection of the intestines.

476. It appears to me impossible that an individual case can establish more facts than this one. The cause, the course of the disease, were known; its typhoid character amply attested; the absence of ‘dothinenterite’ (see § 486) predicted; and the conclusion that it was not typhus, however similar to typhus, fully established and confirmed.

477. The typhoid Synochus is extremely apt to occur in old age, both from the causes which I have enumerated, and as a complication of other diseases. It also frequently occurs in younger subjects, as a complication of disease, and as the result of circumstances of extreme fatigue, exhaustion, &c. In *none* of these cases are the glands of the intestines found diseased or ulcerated; a condition which, as I have already stated, is peculiar to true typhus.

478. A knowledge of the *typhoid* Synochus is absolutely necessary in determining the important question, whether the affection of the intestinal glands be *peculiar* or *essential* to the true *typhus*, or whether there be exceptions to this law. To this question I shall have to revert presently.

II. TYPHUS.

479. There is something far more peculiar and *specific* in the *causes*, *symptoms*, and *morbid anatomy* of Typhus, than of Synochus. I shall proceed to treat of these points in succession.

480. *The Causes.* In reference to the *Causes* of Typhus, I may first observe that, thirty years ago there was scarcely a physician in this country who doubted that it is propagated by *contagion*. I may refer to the works of Dr. Clarke of Newcastle, and Dr. Haygarth of Bath, written about that period. Their object was to ascertain what degree of *dilution* of this contagion, by means of ventilation or space, rendered it inert; and, consequently, whether patients affected with Typhus should be placed in separate "*fever*" wards, or might be put, with other patients, in the common wards of an hospital.

481. Another undoubted cause of Typhus seemed to be accumulated human *effluvia* in crowded wards, prisons, ships, &c. I may refer, too, to the labours of Dr. Carmichael Smyth, and of Guyton-Morveau, about the same period: the former obtained a Parliamentary reward for his experiments with the nitric acid gas; the latter proposed the oxymuriatic acid or chlorine (from χλωρὸς, *green*) gas. These gases were employed as disinfectants. M. Cruveilhier has particularly insisted upon the baneful influence of crowded wards, illustrating his opinion by the events of 1813–1814[1].

482. A third source of Typhus seemed to exist in the crowded filthy houses and their tenantry, in some of the lowest parts of large towns. Dr. Willan, speaking of such sources of infection, observes,—" The rooms do not

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[1] Op. cit. Fasc. vii, p. 9.

change their condition till they change their tenants: often, indeed, so little care is taken, that enough of the contagion remains to infect all the inmates who successively occupy the same premises. I recollect a house in Wood's Close, Clerkenwell, wherein the fomites of fever were thus preserved for a series of years: at length an accidental fire cleared away the nuisance[1]."

483. More recently, the late Dr. Armstrong drew the attention of the profession to the probable deleterious influence of *malaria*, arising from imperfect drains, accumulated filth, &c. in large towns.

484. Still more recently, the late Dr. Macculloch particularly insisted upon the baneful influence of *malaria* arising from stagnant water, damp soil, &c.

485. Whatever may be the cause, I have repeatedly known Typhus to be *endemic* in country villages, for successive years. Hucknall Torkard, near Nottingham, and Frampton Cottrell, near Bristol, present examples of this endemic Typhus.

486. To return to the important question of contagion, I will now briefly detail the opinions of the recent authors upon this point in France, and especially of MM.Bretonneau, Andral, Louis, and Chomel. M. Bretonneau is of opinion that Typhus, or, as he designates this disease, the dothinentérite (δοθινὴ, *a pustule*, ἔντερον, *an intestine*), is eminently contagious; M. Andral declares[2] that he has never been able to detect the influence of contagion either in hospital or private practice. M. Louis[3] does not even agitate the question of contagion! M.Chomel[4], again, speaks more doubtfully upon this point.

487. However undetermined the questions of contagion, effluvia, malaria, &c. may be, there is, at least, no doubt of the influence of *two* causes:—the first, a predisposing cause,—*youth;* the second, an exciting cause,—the *new residence*, 'nouveau séjour,' in a large town, as Paris. These facts,

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[1] Reports, p. 345.

[2] Clinique Médicale, ed. ii, t. iii, page 449.

[3] Recherches sur la Gastro-entérite, t. ii.

[4] Leçons de Clinique Médicale, Fièvre Typhoïde, Paris; 1834, p. 318, &c.

already ascertained by MM. Petit et Serres, have been amply confirmed by M. Louis[1].

488. M. Louis has given the following interesting table of the ages of 138 patients affected with Typhus, of whom 50 died, their medium age being 23 years, and 88 recovered, their medium age being 21 :

14	age from 17 to 20	31	age from 15½ to 20
20	——— 20—25	39	——— 20 — 25
11	——— 25—30	13	——— 25 — 30
5	——— 30—32	5	——— 30 — 39
50		88	

None of the 6 patients under the age of 17 died.

489. From these facts it appears that Typhus did not occur beyond the age of 40; and M. Louis deduces the *Law*, that this peculiar fever never occurs beyond the age of 50, taken as a general term ; and that, however *typhoid* affections may occur in the course of other diseases—of the brain, of the lungs, for example—or after the age of 50, these are never attended by the *series* of symptoms proper to Typhus, nor with ulcerations of Peyer's glands !

490. In regard to the other undoubted cause of Typhus, the *new residence* in a large town, M. Louis has formed the following table :

Of 44 patients who *died*,	Of 83 who *recovered*,
10 had been at Paris during from 2 to 3 weeks	7 had been at Paris during from 2 weeks to 3 months
8 ——— 3 — 5 months	19 — 3 — — 5 ———
10 ——— 6 — 10 ———	19 — 6 — — 10 ———
9 ——— 11 — 20 ———	20 — 11 — — 20 ———
5 ——— 20 — 30 ———	12 — 20 — — 30 ———
2 ——— 4 — 8 years	1 — 30 — — 40 ———
44	7 — 4 — — 8 years
	85

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[1] Compare the Traité de la Fièvre Entero-Mésentérique de MM. Petit et Serres, p. 127 ; with the Recherches sur la Gastro-entérite.

491. From this table it appears that the longer any one has been in Paris, the less is the danger of his becoming attacked with Typhus, and of death, should he be attacked by this formidable disease.

492. Doubtless, various causes coincide to render the human frame more susceptible to Typhus; want of food and want of clothing are of this kind, the operation of which was recently too obvious in Ireland.

493. There are three forms, principally, of Typhus,—the *Mild*, the *Severe*, and the *Sinking*. I shall treat of these in succession:

I. *The Mild Form.*

494. I. *The Symptoms.* The mild form of Typhus usually begins rather insidiously, with chilliness, followed by slight heat of surface, alternate pallor and slight flushing, languor, tremor, muscular debility, headache, vertigo; the pulse is rather frequent; the tongue whitish, and apt to become dry; there are anorexia, and constipated or relaxed bowels.

495. This peculiar tremor gives a characteristic appearance to the countenance and the movements, to the tongue when it is put out, and to the hand when it is extended, which is highly distinctive of this disease. The muscular and mental debility are not less remarkable. The condition of the tongue, the appetite, and the bowels, are also peculiar.

496. This state of things may continue for a fortnight, and then subside.

497. II. *The Complications* consist of

1. *Cephalic,*
2. *Thoracic, or*
3. *Abdominal, Inflammation.*

498. III. *The Effects of Remedies.* There is early syncope on extracting blood in the erect sitting posture,—generally on the flow of less than *ten* ounces.

499. IV. *The Morbid Anatomy* of this form of Typhus is, I believe, similar to that of Typhus in its severe form, varying only in degree.

II. *The Severe Form.*

500. I. *The First Symptoms* of the severe form of Typhus are chilliness and febrile heat, early and peculiar muscular debility, and mental depression; the countenance expresses languor and anxiety, and is either pallid or slightly flushed; the articulation, the manner of protruding the tongue and of holding out the hand, and every muscular motion or effort, is attended with a peculiar tremor; there are headache, vertigo in the erect posture, delirium, and somnolency; the temperature of the general surface is only slightly augmented, and there are not unfrequently coolness and moisture. The tongue is whitish, and apt to become brown and dry; there is complete anorexia, sometimes constipation, sometimes a degree of griping and diarrhœa, and the alvine evacuations are occasionally mingled with slight portions of mucus or blood.

501. II. *The Subsequent Symptoms* are—

502. Augmented tremor of the countenance, dryness of the lips, sordes over the teeth, suffusion of the eyes.

503. Every thing in motion and posture denotes extreme muscular and nervous debility: the articulation is indistinct, the hand is held out tremulously, the tongue is protruded with effort, and is often not drawn in again, from mental torpor; the tremor passes into subsultus, or spasm; the patient falls into the most prone position, unable to support himself even on the side, and is perhaps constantly occupied in picking the bed-clothes.

504. There is delirium, or somnolency, or alternations of these two states, or violent delirium, or deeper stupor.

505. The tongue becomes encrusted, deeply fissured, brown, and excessively dry; the lips are also frequently fissured and bleed, and there is frequently epistaxis. The skin is various—sometimes cool and moist, sometimes of slightly elevated temperature, frequently beset with *miliaria*, especially over the neck and thorax, with the successive appearance of *rose-spots*, from about the sixth to the ninth days, especially on the abdomen and thorax, and with *petechiæ* more generally.

506. The pulse is usually frequent, and easily compressible; there is frequently a sonorous rattle, with or without cough or mucous expectoration; there are generally intestinal pain and distention, and diarrhœa, with dark, offensive, flatulent, mucous, bloody, involuntary, or unconscious evacuations. The urine is frequently partly retained with distention of the bladder, and partly passed unconsciously.

507. The integuments over the sacrum are apt to be affected with gangrene from pressure and the irritation of discharges, and blistered parts are apt to slough.

508. III. *The Morbid Anatomy.* That morbid appearance which alone is constant, is inflammation and ulceration of the *clustered* (or Peyer's) glands of the intestines, especially occupying that part of the ileum situated near the cæcum, but extending over a considerable part of the intestines. This point seems to be established by the labours of MM. Petit and Serres[1], M. Louis[2], M. Cruveilhier[3], Dr. Bright[4], &c. It has been long disputed whether this affection be the *cause*, the *effect*, or a mere *complication* of Typhus fever. It cannot, I think, be justly said to be any one of these. It is a part—an essential part—of this fever, and appears to bear the same relation to the entire disease which the rash and sore throat do in scarlatina, and the rash and the bronchial affection in rubeola.

509. This affection is distinguished by M. Louis into two forms; the former of which he designates the *soft*, the latter the *hard;* and by M. Cruveilhier, into the *granular*, the *pustular*, the *ulcerous*, and the *gangrenous*.

510. To this affection of the glands of the intestine

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[1] Traité de la Fièvre Entéro-Mésentérique; Paris, 1813.

[2] Recherches de la Gastro-Entérite, 1829; a work which will constitute an ERA in the science of medicine, by introducing numerical precision into its data.

[3] Anatomie Pathologique; Paris, 1830.

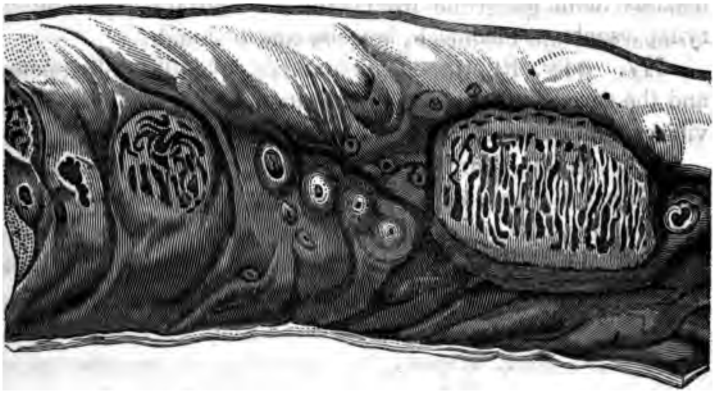
[4] Reports of Medical Cases; London, 1827.

Compare Roederer and Wagler, de Morbo Mucoso; Goettingæ, 1762, and 1783; Prost, La Médecine éclairée par l'Observation et l'Ouverture des Corps; Paris, 1804, pp. lv. &c. This is an extraordinary work for the period at which it appeared. The author observes—"M. Bayle m'associa à ses travaux: dès-lors j'espérai du succes." Bayle, sur la Phthisie Pulmonaire, 1810, pp. 146-7.

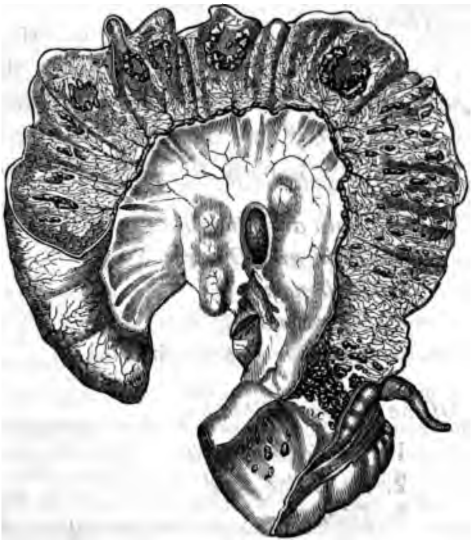
must be added enlargement, or suppuration of the *corresponding* mesenteric glands.

511. The *isolated* (or Brunner's) glands are also affected, in some instances, in the spaces between the clustered glands.

512. The subjoined cut, copied from Dr. Baillie's plates, (Fasc. iv, pl. ii, fig. 3), is a beautiful representation of this disease:



513. It will bear a comparison with the following reduced sketch from the splendid work of M. Cruveilhier:



514. Besides these morbid states of the intestinal glands, there is a general condition which seems to consist in a diminished cohesion of the particles which constitute the solids and fluids of the body; hence we find,

515. 1st. Softening of the parenchymatous substance of all the organs—the brain, the heart, the liver, the spleen, the kidney, &c.

516. 2dly. Softening, thinness, and ulcerations of the mucous membranes—of the epiglottis, larynx, trachea, pharynx, œsophagus, stomach, bowels, &c.

517. 3dly. Rupture of the textures constituting the skin, and the serous and mucous membranes, and hence petechiæ, vibices, and effusions of blood, of bloody serum, &c.

518. 4thly. Want of cohesion in the blood itself; the coagulum of which is soft, uncupped, and occasionally covered with a buff of the consistency of mere jelly.

519. IV. The principal *Functional Complications* are,

I.—*Encephalic*:

1. *Stupor;*
2. *Delirium;*
3. *Subsultus;*
4. *Spasm; &c.*

II.—*Thoracic:*

1. *Cough;*
2. *Loud bronchial Rattle;*
4. *Dyspnœa.*

III.—*Gastric, Intestinal:*

1. *Pain and Sickness;*
2. *Pain and Diarrhœa;*
3. *Melæna;*
4. *Tympanitis;*
5. *Symptoms of Perforation.*

IV. *Of the Urinary Bladder;*

1. *Stillicidium, with*
2. *Retention, and*
3. *Distention.*

520. There is one remark, in reference to the complications of Typhus, which is most important: it is, that the *pain* of the *head, chest, intestines, bladder,* &c. or *the usual causes of such pain, are apt to be masked by the prevailing stupor.*

521. The symptoms in the complications of Typhus are not always commensurate with the structural changes. They frequently depend on the condition of the system at large, of the nervous system, or of the blood.

522. V. The *Structural Complications* are—

523. 1. *Encephalic,* consisting of—1, effusion under the arachnoid; 2, injection and softening of the cortical and medullary portions of the brain; and, 3, similar affections of the cerebellum. This complication is slighter in degree, and less frequent in its occurrence, than is supposed.

524. 2. Effusion of lymph, and ulcerations of the epiglottis, the larynx, the trachea, the pharynx, the œsophagus, &c.

525. 3. *Thoracic,* generally slight, and consisting of—1, adhesions, or effusion of bloody serum into the pleura; 2, hepatization, or splenization of the lung; 3, reddish mucus in the bronchia; 4, a livid red colour, thinness, and softening of the heart, denoted generally by irregularity and feebleness of the pulse.

526. 4. *Abdominal;* these are—1, softening, thinness, ulceration, and the mammelated state, of the mucous membrane of the stomach; 2, softening of that of the intestines, with constant ulcerations of the clustered glands of Peyer, and occasional ulcerations of the solitary glands of Brunner; 3, enlargement and softening of the mesenteric glands; 4, softening of the substance of the liver, spleen, kidney, &c.

5. *Perforation of the Intestine.*

527. This takes place through the ulcerated, or sloughing, intestinal glands. The *symptoms* of perforation of the intestine are generally *sudden* pain and tenderness diffused over the abdomen, nausea and vomiting, sunken countenance, smallness and feebleness of the pulse, cold perspiration, with pallor over the whole surface, and rapid failure and sinking of the powers of life.

528. 6. The *integuments* covering the sacrum are apt to ulcerate and slough from pressure, and those of parts covered with blisters, from irritation, in a degree which becomes somewhat diagnostic. There is also occasionally erysipelas.

529. VI. *The Diagnosis.* Typhus fever is somewhat similar to the following diseases, with which, therefore, it must be carefully compared and contrasted:

1. *Phlebitis.*
2. *Encephalic disease.*
3. *Delirium tremens.*
4. *Enteritis.*

530. The diagnosis of these affections from Typhus fever, will be best effected by carefully comparing and contrasting their characters respectively in every point. This plan will also obviate the necessity of much repetition throughout this work, and form one of the most useful exercises in which the student can be engaged. I shall, in this place, only observe that no disease, except Typhus, *conjoins* chilliness, febrile heat, early vertigo, somnolency or delirium, muscular debility and tremor; the peculiar state of the tongue, of the skin, of the bowels, &c.; *rose-spots; petechiæ; diarrhœa; tympanitis*, &c.

531. 1. Phlebitis is generally traced to a local wound or injury, except it occurs as a puerperal disease. There are a peculiar violence of rigor, anxiety of countenance, appearance of sinking, delirium, frequency of pulse, hurried respiration, vomiting, diarrhœa, &c.

532. 2. In encephalic disease there is generally none of the symptoms really peculiar to Typhus: the muscular strength is unimpaired; the pulse, the tongue, the general surface, the state of the bowels, are comparatively little affected, and there are more simply the symptoms of local affection of the brain.

533. 3. Delirium tremens, notwithstanding the two symptoms implied in its designation, is very different from Typhus: the tremor is less accompanied by debility, the delirium is less attended by stupor; there are, on the contrary, considerable activity and constant wakefulness, the tongue

and skin are moist, the breath tainted by some spirituous liquor, and the disease is readily traceable to its cause.

534. 4. In enteritis there are less febrile action, less debility, and more nausea, vomiting, and diarrhœa. This disease occurs in subjects of every age, frequently from some known cause: there is none of the peculiar state of mind, muscle, tongue, skin, intestinal canal, &c. so characteristic of Typhus.

535. Besides these instances of the diagnosis of Typhus, I must revert to the important distinction between this *specific* fever and the synochus, or *common* fever. However *similar* these cases may be, in some instances, the *causes*, the *symptoms*, the *pathology* are entirely different: the causes of synochus are generally known, those of Typhus frequently hidden; the symptoms of synochus are without the *peculiar* stupor, tremor, rose-spots, diarrhœa, tympanitis, &c. of Typhus; and the morbid appearances of the intestinal glands are peculiar to the latter disease.

536. For the further discussion of this question, I would beg to refer my reader to a paper which I published in the Medical Gazette, vol. x.

537. VII. *The Treatment* of Typhus involves many considerations relative to

1. *The Fever itself.*
2. *Its Complications.*
3. *The state of Convalescence.*

538. The *first* question is as to the propriety and efficacy of blood-letting: this remedy may be employed, 1, for great febrile *excitement*, and, 2, for an inflammatory *complication*. If it be *early* in the disease, we may cautiously adopt the plan described § 448, for acute synochus. The quantity of blood taken will then be accurately adjusted to the degree of excitement, or inflammation, and to the powers of the patient; and I know of no other mode of accomplishing so many objects! The repetition of the blood-letting must be indicated by the continuance of the symptoms, and the unabated strength of the patient.

539. When venæsection is deemed inadmissible on ac-

count of the late period of the disease, and the feebleness of the patient, leeches are still a very important remedy for the complications: six, eight, ten, or twelve may be applied to the temples, to the seat of pain, &c.

540. In the very commencement of Typhus, a gentle emetic, § 447, is proper, and frequently highly beneficial.

541. In the course of the disease, one grain of calomel, with two of the pilula hydrargyri, or half this dose, may be given every night, and some very mild aperient every morning, such as a draught with five or ten grains of rhubarb, and twenty of the sulphate of potass. The bowels must be gently moved, not purged.

542. A milder form of such remedies is the pilula hydrargyri, or the hydrargyrum cum cretâ, alone, or with a few grains of rhubarb, taken each night, with or without a grain of the pulvis antimonialis.

543. A saline draught, with a *little* carbonate of potass, and sufficient lemon-juice; or, better still, twelve drams of soda water, may be given frequently for the dryness of the tongue and fauces, thirst, feverishness, &c.

544. Sometimes the state of diarrhœa, mucous discharges, melæna, and tympanitis, require their respective remedies: with some mild form of mercury, as the hydrargyrum cum cretâ, minute doses of ipecacuanha sometimes do good. Sometimes mild opiates, or opiate enemata, the decoctum hæmatoxyli, &c. are required to arrest diarrhœa; the introduction of a catheter is frequently of great utility in effecting the discharge of flatus, in the case of tympanitis.

545. At a remote period, *tonics*, as quinine, and *wine*, may be required to sustain the strength of the patient, whilst, as we may suppose, the intestinal ulcers are undergoing the process of cicatrization.

546. But a less doubtful remedy is, whilst we regulate the bowels, to administer the mildest kinds of nourishment: asses' milk, milk with soda water, or with water thickened with arrow-root, may be given in appropriate quantities and proportions, from the beginning.

547. In the *complications*, local bleeding and blisters are the most efficient remedies: the head and chest are

relieved by applying leeches and blisters. The parts over which blisters have been applied are very apt to slough; these must, therefore, be removed early.

548. For delirium, a spirit lotion applied to the head, and pediluvia to the feet, are of great value.

549. The principal causes of relapse are

1. *Improper Diet, and*
2. *Undue Exertion.*

550. I need scarcely observe that these must be carefully avoided.

551. In every point of view, the following remedies are most important, both during the course of the disease and of the convalescence, viz.

1. *The recumbent posture.*
2. *Muscular repose.*
3. *Extreme attention to cleanliness.*
4. *The full fresh air.*

552. In enjoining the recumbent posture and muscular repose, it is necessary, however, to guard against local pressure, on the sacrum especially, to prevent gangrene. A pillow placed variously, a slight change of posture, are very important, whilst all muscular effort is carefully avoided.

553. Extreme cleanliness is required to prevent the sloughs.

554. Free ventilation is, with frequent ablution, a restorative of extreme value.

555. The sinking form of Typhus requires the prompt and efficient use of wine and other stimulants, with a strict attention to the means of maintaining or restoring the temperature over the surface, and at the extremities.

556. I have an interesting specimen of ulcerations of the intestinal glands, which occurred in a patient of Mr. R. Ceely of Aylesbury, aged 57. The case was one of the fever prevalent in and near Aylesbury, and arising, in Mr. Ceely's opinion, sometimes from malaria, sometimes from contagion. A series of such cases, drawn up by such a pen as Mr. Ceely's would be of inestimable value.

III. INTERMITTENT.

557. The *specific Cause* of Intermittent Fever appears to be *marsh effluvia*, emphatically termed *miasmata*. Some *subsidiary* causes are—1, malaria; 2, the north-east wind; 3, spring and autumn; 4, the night air; 5, cold and wet; 6, fatigue; 7, the depressing passions; 8, defective clothing, diet, &c.

558. Marsh effluvia, the specific cause of Intermittent, are engendered under a very peculiar combination of circumstances only, *the stagnation of fresh water over fresh vegetation in the state of decay.*

559. 1. Mere stagnant water does not produce Intermittent, nor does pure watery vapour. Nearly double the quantity of rain falls in some of the western counties of England, compared with its eastern shores. There can, therefore, be no deficiency of stagnant water. Yet there are no Intermittents. Flooded or inundated districts are not liable to ague. The Delta of the Nile is free from this disease. The same remark applies to places where the thickest fogs prevail.

560. 2. Nor is it sufficient that water stagnate over fresh vegetation, if this be in a state of growth. Flooded, or water meadows, as they are termed, in which vegetation is frequently most luxuriant, do not induce Intermittent.

561. 3. Even the actual growth of the vegetation is unnecessary, if it be not in a state of decay or putrefaction. The bogs and peat marshes of Ireland and Scotland are not liable to induce Intermittent.

562. 4. Far less will water, which does not stagnate, give origin to this disease. The banks of rivers and of lakes are free from Intermittent fever.

563. 5. It is also an essential point that the water should be fresh-water; salt-water marshes, those which surround Venice, for example, do not engender Intermittent. A marsh near Minehead, Somerset, four miles in length, and one in breadth, washed by the Bristol Channel, is free from this disease. A salt-water marsh at the mouth of a river

may, however, be surrounded by another of fresh-water, and hence, if the latter fact be inadvertently overlooked, be erroneously supposed to induce ague.

564. 6. Compare, with these facts, that of the prevalence of Intermittent wherever fresh water stagnates over decaying vegetation, and the disappearance of this disease whenever the marsh or fen is effectually drained. The coast of Lincolnshire, in our own country; the ill-famed Walcheren, situated 'below the level of the sea at high water,' 'divided into small inclosures by ditches, which serve as drains, two-thirds full of water,' 'the soil an alluvial detritus carried down by the Rhine and Scheldt[1];' the Pontine marshes; will afford us sufficient examples of the truth of this proposition.

565. It sometimes occurs that the base of a mountain or considerable hill may be free from Intermittent, whilst a marshy table-land, in an elevated part, may be liable to ague. This is the case with Pamphill, Wimburne, Dorsetshire.

566. In general, the presence of a river, the stream of which was even moderately rapid, would indicate the absence of ague; whilst that of certain plants, the peculiar growth of marshes, as the *juncus vulgaris*, the *iris lutea*, would indicate the probable prevalence of that disease.

567. 7. But then we are met with the fact, that Intermittent fever occurs where the marsh effluvia cannot exist. Occasionally, we see Intermittent in London: James I[2] and Oliver Cromwell[3] both died of, this disease; it prevailed even, in the time of Sydenham[4]; it was seen, occasionally, by Willan and by Bateman; and it was not uncommon, so recently as the year 1828. Intermittent seems also, from the remarks of M. Andral, sometimes to originate in Paris. Dr. Willan observes, in his report for the autumn of 1796, "Contagious malignant fevers bore a smaller proportion than usual to other acute diseases: neither have Intermittents this autumn been very numerous. The latter occur, for the

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[1] Sir G. Blane's Select Dissertations, 1822, p. 99.

[2] Hume's History of England, v. vi, p. 134, ed. Oxon, 1826.

[3] Ibid. v. vii, p. 251.

[4] Entire Works of Dr. Sydenham, by J. Swan, M.D. ed. 2; 1749; p. 44.

most part, in persons who have resided some time in the neighbourhood of marshes. We must not, however, consider marsh effluvia as the universal cause of Intermittents; since it is found, that persons constantly residing in the most healthy parts of the metropolis are sometimes affected with them, as happened in two cases above put down amongst the periodical diseases[1]." Dr. Bateman relates, in his Report for the spring of 1805,—"The majority of the Intermittent fevers, which we occasionally see in London, is brought from the marshy parts of the country: but instances sometimes occur, which cannot be traced to the miasmata of marshes, nor even to unwholesome exhalations from damp and uncleanly situations of any kind. One of the patients in the preceding list had not been absent from London for many years, and has lived, during the last eight months, in a court between Holborn and the north side of Lincoln's-Inn Fields; yet he was attacked with a very obstinate tertian[2]." M. Andral says,—"Most of the patients had contracted the fever in the very centre of Paris, where they had resided either several months, or more than a year[3]."

568. Does Intermittent fever, then, ever arise from the malaria of a crowded city? Does London, in 1660, differ from the same metropolis in 1835, merely by the deficient condition of its drainage, at the former period, compared with the latter? This is a highly interesting question,—like too many others in medicine, still undetermined.

569. Malaria is the first of those subsidiary causes of Intermittent which I have enumerated (557); exposure to the *north-east wind* is the second. The prevalence of this wind in 1828 seems to have produced Intermittent over the country, especially in the fenny districts, but also in districts in which intermittent is usually unknown. Here another question, full of interest, occurs: can the north-east wind alone induce Intermittent in those not predisposed to this fever by previous exposure to the influence of marsh miasmata, or of malaria? is it a cause so subsidiary as to require the existence of the seeds of Intermittent to be already sown

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[1] Miscellaneous Works, 1821, p. 167.

[2] Reports, p. 41.

[3] Clinique Médicale, Partie i, p. 472.

in the system? Whatever may be the truth, in reference to this question, there can be no doubt of the powerful influence of this wind in inducing, or reproducing, Intermittent in the predisposed. And Dr. Bateman justly observes,—" In attempting to ascertain the origin of Intermittents, one circumstance requires attention; viz. the period during which the influence of miasmata may lie dormant in the constitution, or the time which may intervene between the exposure of the person and the commencement of the disease. An inattention to this circumstance tends very much to invalidate the conclusion which might be drawn from the cases of Dr. Beddoes. The first case which appeared at the Dispensary commenced in March; the patient had resided in London since the beginning of December, at which time he returned from Essex. About the same time, two patients, attacked with ague, who had also returned to town from Kent or Essex early in December, applied to a medical friend in the city. In these instances, a period of three months had elapsed between the infection (if the term may be used) by miasmata, and the appearance of the consequent ague.

570. " Another patient in the above list, after residing several months at Sheerness, returned to London in November last, and in the beginning of the present month was seized with tertian, having lived, during an interval of nearly half a year, in Liquor-pond Street, Gray's-Inn Lane. From these facts, it would appear that the latent period of Intermittents is very indefinite; probably greater and more irregular than that of continued fever, according even to the limits allowed by Dr. Haygarth[1]." M. Andral[2] makes some similar observations: " Of the patients affected with Intermittent, the smallest number had been exposed to the influence of marsh miasmata. In some, the fever began in the very place where the miasmata existed, and where Intermittent was epidemic. In others, the first paroxysm took place after the patient had left the source of the miasmata." " One patient, who had lived with impunity during two months at Brie-Comte-Robert, where there were many cases of fever, was

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[1] Reports, p. 41-42.

[2] Clinique Méd. ed. i, part i, p. 471-472.

seized with the first paroxysm on the day of his arrival at Paris. Another had only experienced a little headache when he quitted Rochefort, where Intermittent was epidemic; on his arrival at Paris he was seized with a first paroxysm.

571. "In another patient, a mere visit to a marshy country renewed an Intermittent, which had originated in a marshy district, but which had ceased during two months."

572. The influence of spring, and especially of autumn, in inducing or renewing Intermittent fever, is well known. In aguish districts, these are the seasons during which the inhabitants suffer most severely; and after exposure to the miasmata of marshes, or after having actually experienced an attack of Intermittent, although a considerable interval may have elapsed, this fever is frequently excited by the atmospheric circumstances of spring or autumn. Sir Gilbert Blane observes,—"when those who have imbibed the poison, are transported into countries where the air is in a state of greatest purity, it is in the autumnal months that they are most commonly attacked. There was a very striking proof of this after the campaign of North Holland, in 1799. In the following year, some of the officers and men who had escaped the disease, were taken ill in the autumnal months; and none, that I heard of, at any other season of the year[1]."

573. The other well-known subsidiary causes of Intermittent are, exposure to the *night air*, or to *wet and cold*, or to *fatigue*, or *depressing passions; defective clothing*, *diet*, &c. In fact, any cause of exhaustion of the system, whether this act through the nervous, muscular, vascular, or digestive organs, may induce ague in the predisposed. Sir G. Blane observes,—"I was informed, in February, 1811, by a field-officer, who came home from Portugal on account of bad health, that those men of his own regiment, as well as of others who had served before in Walcheren, were, upon the first exposure and fatigue, rendered unfit for duty, chiefly by intermittent fevers, so as to leave not more than a third part of them fit for service, a proportion of such far above that of the army in general[2]."

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[1] Select Dissertations, p. 104. [2] Ibid. p. 107.

574. The modes of *prevention* of Intermittent are so interwoven with a knowledge of their causes, that I have bestowed greater time and space upon this subject than I should otherwise have thought it right to do. With the same view, it is important to remark, that, as the inhabitants of crowded towns are less subject to typhus than those newly arrived, so the inhabitants of marshy districts are less subject to Intermittent fever than strangers,—the *acclimated* than *new-comers*. It is therefore particularly incumbent upon visitors and 'fresh-men' to be very careful to avoid the subsidiary and auxiliary causes of this disease.

575. It would be interesting to enquire—what degree of exposure to marsh effluvia is sufficient to sow the seeds of an Intermittent; during what period of time these seeds generally remain latent. Dr. Wells[1] says those newly arrived in an aguish district do not become affected with Intermittent fever in less than eight or ten days; and that "agues often do not appear until spring, though their causes were applied in the preceding autumn." Dr. Wells adds, "I have known three instances of this latter fact myself." He even suggests that the presence of the influence of these seeds of ague in the system may,—on the principle that "the existence of one disease in the human body, or even a tendency to one disease, often renders it less susceptible of another,"—actually protect the individual, and the population indeed, from phthisis; for he endeavours to prove that, where ague prevails, phthisis rarely occurs.

576. When the seeds of Intermittent exist in the system, as in those who have been exposed to marsh effluvia, or who have already recently experienced the disease, exposure to the other subsidiary causes will, however, excite the febrile actions and induce the disease more promptly.

577. II. *The Course* of Intermittent is marked by successive distinct, cold, hot, and sweating stages; and these are recurrent, every second, or every third day, or at other intervals, giving origin to the designations, quotidian, tertian, quartan, &c.

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[1] Trans. of a Soc. for the Improvement of Med. and Surg. Knowledge, v. iii, p. 515.

578. 1. The *Quotidian* has an interval of twenty-four hours, a paroxysm of moderate severity, but of long duration, beginning with a slight cold stage, generally in the morning. It is apt to assume the remittent form. It occurs principally during the spring.

579. 2. The *Tertian* has an interval of forty-eight hours, a severer cold stage, a shorter paroxysm, recurrent generally about noon, and followed by much perspiration. This is the most frequent form of Intermittent, and is observed to be milder in spring than in autumn.

580. 3. The *Quartan* has an interval of seventy-two hours, a short paroxysm, and a long intermission. The paroxysms usually occur after noon, with a long and severe cold stage, a gentle hot stage, and slight perspiration. The quartan Intermittent fever occurs chiefly in autumn, is apt to prove obstinate, without having any tendency to assume the remittent form.

581. To reduce this question to numbers, M. Andral observes[1] that of 25 quotidians, the paroxysm in 11 began between 4 and 11 A.M., 8 between 11 and 2, and 6 in the evening; of 19 tertians, 12 began before 10 A.M., 4 at noon, 1 at 2 P.M., and 2 in the evening; of 7 quartans, 1 began in the morning, the rest after noon; in one case, which changed its type, the paroxysm came on in the morning whilst it was quotidian, and in the afternoon when it became quartan.

582. Of the relative numbers of the different types of Intermittents, we have the following table from M. Louis[2] and M. Andral[3]:

	Louis.	Andral.
1. Of Quotidians	40	28
2. Of Tertians...	36	19
3. Of Quartans...	8	7
4. Irregular...	25	2

583. 4. Intermittent fever sometimes assumes the *Reduplicated*, or merely *Remittent* forms; and sometimes every

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[1] Clinique Médicale, ed. i, t. i, p. 475.

[2] Op. cit. t. ii, p. 292-294.

[3] Ibid. t. i, p. 470.

kind of *irregularity* in form, and in the intensity of its paroxysms, or of their different stages.

584. The recurrence of the paroxysm, although not always accurate in point of time and hour, in different instances, affords a very important means of diagnosis in obscure cases. The rigors in suppuration and in hectic have not even this degree of regularity of return.

585. III. *The Symptoms.* The paroxysms of Intermittent fever begin with yawning and languor, and a sense of creeping along the back; the patient then shivers with cold; the countenance and general surface are pale, shrunk, and cold; there is that state of the skin termed 'cutis anserina,' and the nails assume a livid hue; the respiration is sibilant; the pulse is small, and frequent, and perhaps irregular; there are anorexia and thirst; the tongue is dry and clammy; the urine is limpid.

586. The cold stage gradually subsides, and the countenance becomes flushed and tumid, and the eyes injected, whilst the general surface is turgid, hot, smooth, and dry; there are frequently acute pains of the head, throbbing of the temporal arteries, intolerance of light and sound, and delirium; the respiration is frequent, but less anxious; the pulse strong, full, and frequent; there is urgent thirst, with continued dryness of the tongue; the urine becomes high coloured.

587. In the sweating stage, the countenance assumes nearly its natural appearance; the skin loses its tumidity and heat, and becomes covered with perspiration. The head is relieved, and sleep often supervenes; the respiration becomes free, the pulse nearly natural; the urine deposits a degree of sediment. The observations made upon the urine by the older writers on Intermittents, are confirmed by M. Andral, in the Clinique Médicale; ed. 1, t. i, p. 479.

588. The paroxysm over, the patient is left somewhat pale and languid, and there are headache and anorexia. In the commencement of Intermittent fever, the apyrexia is, however, sometimes almost free from indisposition. The health is, at length, gradually impaired: the complexion assumes the hue of painters' putty, and emaciation and anasarca supervene upon the other symptoms.

589. IV. *The Diagnosis.* There are four affections from which it is essential to distinguish Intermittent: they are—

1. *Hectic.*
2. *Suppuration.*
3. *Stricture.*
4. *Retention of Urine.*

590. The symptoms of fever, in some cases of hectic, assume the Intermittent type in such a degree as to resemble Intermittent. It must, however, require but ordinary care to detect the primary and local disease.

591. The danger of an error in the diagnosis is still greater, when deep-seated and undetected suppuration has taken place. The paroxysms of fever are such as to impose upon the most experienced for a time. In cases of Intermittent fever, it is well, therefore, to examine for visceral disease, especially in districts little liable to ague, and to bear in mind, that, even amongst endemic ague, we may have cases resembling Intermittent, but, in fact, of a totally different nature.

592. Stricture, and the use of the bougie, are not unfrequently attended by rigor, fever, perspiration, &c.; in fact, a paroxysm of Intermittent fever. Repeated quotidian paroxysms occasionally occur from stricture, and are treated for Intermittent, *until that stricture is detected*, and removed by the use of the *bougie*.

593. The same fact has been observed in cases of partial retention of urine. The interesting particulars of such a case were detailed to me by Dr. Farre. The *catheter* unveiled the mystery and cured the fever!

594. V. *The Complications* of Intermittent fever are frequently, like the fever itself, periodic,—Intermittent or remittent: and sometimes, without fever, there are similar paroxysms and intermissions, or remissions, of local affections.

595. The principal of these are,

1. *Hemicrania.*
2. *Pain of the Eye-brow, or Brow-ague.*
3. *Thoracic Pain.*
5. *Pain of the Testis.*
6. *Other Topical Pains.*

596. These complications of Intermittent deserve the most attentive consideration. One of them frequently becomes the *prominent* malady, and *masks* the principal disease. Sometimes, as I have stated, without the febrile symptoms, a local affection assumes an Intermittent or aguish form. In other cases, the patient who has once had ague, becomes subject to languor, and vague, aching, weary pains, which are only to be traced to their cause by the utmost attention.

597. These affections sometimes assume a more aggravated form, and there are,

1. *Headache, Delirium, Coma, or Amaurosis.*
2. *Thoracic Pain, Cough, Asthma, or Syncope.*
3. *Colic, Cholera, or Diarrhœa.*

598. These local affections may precede, accompany, or follow Intermittent fever; or they may exist variously in the Intermittent or remittent form, independent of febrile symptoms. They will be particularly noticed hereafter.

599. The most frequent of these complications is the cephalalgia, hemicrania, or brow-ague. In the cases observed by M. Louis, cephalalgia occurred in 37 out of 40 cases of quotidian, in 36 out of 38 of tertian, in 7 out of 8 of quartan, ague.

600. But, perhaps, the most extraordinary symptom is the *splenic* pain, tenderness and tumor. These are frequently observed in the beginning of Intermittent, and in the cold stage of each paroxysm especially. After a time this organ is apt to become permanently enlarged.

601. The connexion between the paroxysm of Intermittent and the state of the spleen, and the effect of cinchona and arsenic, are highly interesting; and it is an equally interesting question, whether the same connexion subsists in the cases of ague-like paroxysm from suppuration, stricture, or retention of urine; (see §585).

602. The principal permanent complications are,

1. *Enlargement of the Spleen.*
2. *Anasarca.*

603. There is a prevailing notion, or suspicion, amongst the French pathologists, that the source of Intermittent is the

spleen[1]. This organ becomes tender and tumid, especially in the cold of each paroxysm, and eventually permanently enlarged, constituting the '*ague-cake,*' in the course of the disease, if this be protracted.

604. M. Louis observes, with his wonted reserve, "if we cannot affirm that Intermittents consist in a change, more or less severe, of the spleen, because it preserves its size in the intervals, and because these fevers may be removed whilst it is undiminished; still this organ deserves great attention from those who investigate the subject of Intermittents, since it is evidently affected in the *commencement* in many cases, and much more frequently than the other organs[2]. M. Andral asks—" What is the nature of the change experienced by the spleen in Intermittent fevers? Is it *cause* or *effect* of the fever ?"

605. I must add a few words respecting the dropsy which occurs in Intermittent. Dr. Wells observes[3]—" Dropsy is another well-known consequence of ague. Whenever I have observed dropsy of the abdomen to arise from this cause, which, however, has not been often, swelling of the lower extremities have always preceded it. Sir John Pringle remarks that the dropsies which occurred after ague in the Netherlands, generally began at the feet, and rose gradually to the belly." M. Andral observes,—" When dropsy is the result of disease of the liver, ascites almost constantly precedes the anasarca. In the patients (affected with Intermittent) on the contrary, the anasarca was first observed."

606. .It appears probable to me that the enlarged spleen of Intermittent may induce anasarca, by pressure or counter-pressure upon the ascending cava; whereas ascites may be produced, in disease of the liver, by interrupted circulation through the vena portæ.

607. VI. *The Morbid Anatomy* of Intermittent fever seems really to be little known. The spleen is the organ

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[1] Compare Louis, Op. cit. t. iii, p. 293, &c. Cruveilhier, Op. cit. fasc. ii, p. 3. Andral, Op. cit. ed. i, t. i, p. 481.

[2] Op. cit. t. ii, p. 293. Note.

[3] Trans. of a Society for the Improvement of Med. and Chir. Knowledge, vol. iii, p. 527.

chiefly and most frequently affected; it becomes enlarged. This enlargement is discovered during life by recurrent pain, dulness of sound on percussion over the false ribs of the left side, and, at length, on examining the region of the spleen by pressure. The spleen may remain enlarged, ascend, or descend, and constitute a mode of ascertaining the existence formerly of Intermittent fever, without materially affecting the health.

608. VII. *The Treatment* comprises the measures adopted,—1, during the *interval;* 2, during the *paroxysm;* 3, *in the case of imperfect remissions;* 4, for the *complications;* 5, against *relapses.*

609. During the intervals, the functions of the stomach and bowels must be principally attended to: unless there be excitability of the stomach, a gentle emetic (see § 447) does good; this should be followed by a mild dose of the hydrargyri submurias (§ 447), and an aperient draught (§ 447). Afterwards, the secretions of the bowels must be gently excited (§ 541).

610. If there be irritability of the stomach, the emetic and aperient medicines must be avoided, and the secretions and the bowels will be best excited by means of large enemata of warm soft water: the proper mode of administering this remedy is to inject the water as *slowly* as possible, and as *long* as possible; the colon is, in this manner, first filled, then distended, and stimulated to contraction; the medium quantity used, is from fifty to sixty ounces; and its efficacy, in removing the load of the *colon*, and in restoring the bile to its channels, is quite extraordinary.

611. The functions of the stomach and bowels being thus regulated, the next object is to prevent the coming paroxysm.

612. The different preparations of the cinchona afford the most effectual means of accomplishing this object; a draught, with two or three grains of the sulphate of quinine, with double the number of drops of the dilute sulphuric acid, may be given every hour, or every two hours; or large doses of the pulvis cinchonæ flavæ may be given at similar intervals. If necessary, the doses of these medicines may be augmented and the intervals between them diminished.

613. If the cinchona fail, the liquor arsenicalis may be given in the dose of from six to eight, ten, or twelve, minims, twice or thrice a day,—*watching* against sickness, griping, diarrhœa, or mucous discharges, denoting fret or inflammation of the mucous membrane of the stomach and bowels.

614. There is this difference between cinchona and arsenic: the former may be given in any dose which the stomach can bear, and may be administered to produce a *prompt* effect—to prevent the *coming* paroxysm; the latter must be given with caution, continued so as to effect a *slower* impression on the system, and gradually to subdue the *disposition* to returns of the paroxysm. With *both* these objects, the cinchona and the arsenic may be given simultaneously.

615. It would be impossible and useless to enumerate all the remedies which have been proposed as cures of Intermittents: every kind of stimulant, every kind of astringent; mental, as well as bodily, impressions; have been employed with occasional success in preventing the return of the paroxysms.

616. During the paroxysms various remedies have also been proposed. Venæsection has recently been highly recommended in the cold stage by Dr. Mackintosh of Edinburgh, to cut short the paroxysm and obviate the disposition to its return. Venæsection has also been instituted in the hot stage. Warm diluents in the cold stage, and salines in the hot, are otherwise perhaps the only safe or useful remedies during the paroxysm of Intermittent.

617. There is a circumstance in which the remedies, proper during either the intervals or the paroxysm, can be efficiently administered; it is where there are, after the violence of the paroxysm is over, but imperfect remissions: it is then necessary to give mild mercurials and aperients, to correct the secretions and regulate the bowels; and to *wait* for a more perfect remission of the febrile symptoms, and the opportunity of giving the cinchona or the arsenic.

618. The next object is to relieve the complications: the pains and the irritability of the stomach sometimes require opiates; the affection of the spleen is best remedied by local blood-letting, leeches or cupping.

619. To prevent Intermittent, and to prevent relapses,

a mild nutritious diet, a moderate quantity of wine, the quinine, care to guard against cold, damp, or exposure to the night air, the north-east wind, &c. (see § 557), are the principal remedies. To prevent relapses especially, the patient should keep the secretions and bowels in order; should live on the simplest and most wholesome dishes; take wine moderately, and the quinine occasionally, but especially in the autumn and spring, on the slightest feeling of neuralgia or of aching, weary pain, or of any aguish symptom, however slight.

620. Dr. Fordyce observes[1],—"When Intermittents cannot be cured in fenny countries, they give way easily on the patient's coming into dry air; as I have observed in patients brought from Lincolnshire to the hospital, who have been easily cured, although the same remedies had been used before without success."

621. Precisely the same principles obtain in the treatment of various diseases of intermittent character, as hemicrania, brow-ague, neuralgia. The secretions must be restored, and the quinine, the arsenic, &c. must be tried.

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[1] Trans. for Improvement of Med. and Surg. Knowledge, v. i, p. 14.

CHAPTER II.

ON ERUPTIVE FEVERS.

622. SINCE the appearance of the classical work of the late Dr. Willan, and the useful abridgment of Dr. Bateman, nothing seems wanting to the description and portraiture of cutaneous diseases, both acute and chronic. And if to distinguish these several diseases from each other were all that were required, the diagnosis might be said to be almost complete. But this is not all. The treatment of these diseases does not depend merely upon the questions, whether it be rubeola, or scarlatina, or other eruptive fever; but upon the question whether the disease, be it what it may, be complicated with internal organic changes, or modified by constitutional circumstances.

623. These are the really important points for diagnosis, the important questions on which recovery or death depends. And I do not hesitate to say, that, in these respects, but especially in that of the complications, the subject is involved in the most intense obscurity, and offers ample scope for investigation. If there be any thing *peculiar* in these complications, that peculiarity is completely unknown, and must be established by new examinations. If such peculiarities of morbid change require peculiarities in the treatment, this too remains to be ascertained by future inquiries.

624. It has not even been ascertained whether the affection of the mucous membranes be merely inflammatory, or whether it be specific; that is, whether it be rubeolous in rubeola, and scarlatinous in scarlatina, as it is variolous in variola. But I believe it is so. This observation applies not to the eyes, fauces, larynx, trachea, and bronchia only, but also to the stomach and intestines.

625. But the observation is of still greater moment when it is considered in connection with the other textures, the morbid affections of which, in eruptive fevers, appear scarcely to have been examined at all. Yet it is certain that the arachnoid, the pleura, and the parenchymatous substance of the lungs, as well as the mucous membrane of the bronchia and of the stomach, undergo morbid changes in rubeola; that the arachnoid, as well as the parenchymatous, serous, and mucous textures of the thorax and abdomen, the subcutaneous cellular tissue, and the joints, are involved in the course of scarlatina. Yet where do we meet with any satisfactory account of these morbid changes? Willan and Bateman, Rayer and Biett, Laënnec, and Andral, are searched in vain for the morbid anatomy of eruptive fevers. There are merely scattered opinions or facts. All is vague, general, and unsatisfactory. A work upon this subject at all comparable to that of M. Louis upon the Gastro-entérite, would be an inestimable contribution to medical science.

626. But, besides the *complications*, there is another interesting subject of inquiry, especially in regard to eruptive fevers: it is the remoter *consequences* or *sequelæ*. These are acute and chronic. The former affect the head, the chest, the abdomen, the cellular membrane. The latter are, principally, *chronic inflammation* and *tubercles.*

627. The science of medicine is not so simple as it has been made to appear. When our books present a faithful portraiture of nature, we shall discover that, both *during* the course and *after* the course of many diseases, we have still to *watch* the patient, if we would early detect diseases which only require to be overlooked and disregarded in their beginnings, to be placed beyond the reach of remedy. I expect much will really be effected in simplifying the subject by the mode which I have adopted of placing these arrangements before the student. The eye, the mind, will speedily become familiarized with the multitude of events which occur, and then the principal difficulty will be overcome.

628. In the present chapter I purpose to notice those objects of the diagnosis upon which the treatment principally

depends: these are, the conditions of the system and of the internal organs. In a subsequent chapter I shall compare and contrast the different rashes, with the view of determining the question of the subsequent safety or liability of the individual, in regard to the different contagious eruptive fevers respectively.

629. There are several points for consideration in reference to each of the Eruptive Fevers. They are—

1. *The prevailing Epidemic.*
2. *The Latent period.*
3. *The Febrile period.*
4. *The form and locality of the Eruption.*
5. *The peculiar Indoles of the disease.*
6. *The form and locality of the Internal affection.*
7. *The Sequelæ.*

630. Rubeola and scarlatina, variola discreta and variola confluens, the different forms of erysipelas, are remarkably different in all these respects, as I shall state presently, and the difference is one of great practical moment.

631. There are no diseases which try the skill of the physician, in reference to early diagnosis, so much as Eruptive Fevers. It is so important to determine, on the very first appearance of the eruption, this question of the diagnosis, that I shall take great pains to point out the source from which it flows; the fate of a family, of a school, and the reputation of the physician, frequently depend upon the promptitude and accuracy with which the disease is detected. The lesson is one which cannot be learnt in *hospital* practice.

632. I shall proceed to enumerate the principal Eruptive Fevers. They are—

I. RUBEOLA.
   1. *Vulgaris.*
   2. *Sine Catarrho.*
   3. *Nigra.*

II. SCARLATINA.
   1. *Simplex.*
   2. *Anginosa.*
   3. *Maligna.*

III. VARIOLA.
  1. *Discreta.*
  2. *Confluens.*
  3. *Modified.*

IV. VARICELLA.
  1. *Varicella lenticularis.*
  2. *Varicella conoidalis.*
  3. *Varicella globata.*

V. VACCINIA.
  1. *Perfect.*
  2. *Imperfect.*
    1. *The Vaccine Pustule.*
    2. *Ulceration.*
    3. *Irregular Vesicles.*

I. RUBEOLA.

633. Rubeola, besides its ordinary form of *Rubeola vulgaris*, occasionally occurs unaccompanied by catarrhal symptoms, when it is designated by Dr. Willan *Rubeola sine catarrho;* at other times the rash, which is usually florid, becomes livid, when it is called *Rubeola nigra.*

1. *Rubeola vulgaris.*

634. I. *The History.* Rubeola is unequivocally contagious. A latent period of from *ten* to *fourteen* days intervenes between exposure and the development of the febrile symptoms[1]. The catarrh appears on the *second* or *third* day

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[1] Dr. Willan states—"The children of my friend Mr. Pearson were affected with the measles in the following order:—

1. A boy, aged 10, had the eruption on the 5th day of fever, 3 Dec. 1797.
2. A boy, —— 7,————————6th————15.
3. A boy, —— 2,————————3rd————15.
4. A girl, ——11,————————4th————16.
5. A girl, —— 6,————————5th————18.
6. A boy, —— ½,————————3rd————27.
7. A girl, ——13,————————4th———— 1 Jan. 1798.

The last child came home from school on the 16th, and was, therefore, affected with of fever. The rash first appears on the face and neck on the *fourth* day, and on the chest and extremities on the *fifth*; on the *sixth* it begins to decline on the parts first affected, whilst it is vivid on the general surface. On the *seventh*, *eighth*, and *ninth* days, the rash fades, leaving the cuticle in a state of exfoliation.

635. II. *The Symptoms.* Rubeola is early characterized by the conjunction of the fever, and a sensation of stricture across the forehead and eyes, with a disposition to sleep; to these symptoms are added, on the second and third days, redness of the eyes, and turgidity of the eyelids and nostrils, a copious flow of tears, and frequent sneezing, a sense of soreness about the throat, hoarseness, a frequent, dry cough, difficulty in breathing, and a sense of constriction across the chest. The rash commences with distinct, red, and nearly circular dots; afterwards larger patches appear, which tend to assume crescentic forms. The surface of the skin is gently raised; the wrists and hands are papillated; the colour of the rash is deeper and less vivid than that of scarlatina, being of the raspberry hue; miliary vesicles are frequently seen on the neck, breast, and arms. The general surface is less tumid than in scarlatina.

636. II. *The Complications* of Rubeola are the following:

I. *Inflammation of the Eyes and Nostrils.*
II. *Inflammation of the Ears; or Ear-ache.*
III. *Efflorescence on the Throat.*
IV. *Inflammation*—1. *of the Larynx;*
    2. *of the Trachea and Bronchia;*
    3. *of the substance of the Lungs;*
    4. *of the Pleura and Pericardium;*
    5. *or of the Peritoneum.*

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the rash sixteen days after exposure to contagion. For eight days before, she had had catarrhal symptoms, attended with headache and giddiness.

" The eldest child of White, King Street, St. James's, had the rash, October 31, 1796, the 5th day of fever. Two younger children had the rash on the 11th of November, the 5th day of fever.

" Infants at the breast are not so susceptible as children more advanced." Cut. Dis. p. 214.

V. *Appearance of the Catamenia.*
VI. *Sudden attacks of Inflammation of the Brain and its Membranes,—with or without—*
VII. *Acute Inflammation of the Cellular Membrane, with Anasarca.*

637. III. *The Sequelæ* are—

I. *Chronic*—1. *Cephalic, or*
2. *Thoracic, Inflammation.*
II. *Tubercles.*

638. This table of complications and sequelæ should be vividly present to the mind whenever we visit a case of Rubeola. To avoid repetition, I refer the reader to the several chapters which treat of cephalic and thoracic diseases, for the special diagnosis of these morbid affections, whether they exist as simple forms of disease or as complications of the various fevers.

639. IV. There are several occasional *Events* in the History of Rubeola, which I will enumerate in this place: they are—

I. *The recurrence of the Rash.*
II. *The recurrence of Rubeola.*
III. *The Interruption of another disease.*
IV. *The Conjunction of another disease.*

640. The *recurrence* of the rash and febrile and catarrhal symptoms soon after the first series had disappeared, is mentioned by Dr. Willan[1]. It should, therefore, be borne in mind, as a possible event.

641. The *recurrence* of Rubeola in patients having previously gone through this disease, was first pointed out by Dr. Baillie[2], and afterwards witnessed both by Dr. Willan[3] and Dr. Bateman[4].

642. Dr. Bateman gives two cases in which other dis-

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[1] Op. cit. p. 218; and on Cutaneous Diseases, p. 236.

[2] Trans. of the Soc. for Improvement of Med. and Surg. Knowledge, vol. iii, p. 258; 263.

[3] Reports, p. 304. Cut. Dis. p. 235.

[4] Reports, p. 276.

eases were *interrupted* by the recurrence of Rubeola[1]: the first was pertussis; the second, the crowing disease of infants. His remarks may be compared with the observations of Dr. Willan[2].

643. The *conjunction* of another disease with Rubeola has been noticed by several authors. Dr. P. Russell gives two cases of the simultaneous existence of Rubeola and Variola[3]. The same fact was observed by Dr. Thomson of Edinburgh[4].

644. V. *The Morbid Anatomy* of Rubeola, in its simple forms, is, in my opinion, unknown; that of its complications and sequelæ is supposed to be perfectly similar to that of affections of the several parts enumerated in the preceding table, not rubeolous. Is it so?

645. There is still scope for an interesting work on the morbid anatomy of this and other eruptive fevers and their complications.

646. VI. *The Indoles.* I employ this term merely to attract the attention of the student to an important subject,—the difference of character or tendency of different diseases. Typhus is disposed to *ulceration* and *sloughing*. The disease of which I am now treating is characterized by a disposition to *adhesive inflammation*. That which follows is again disposed to ulcerative inflammation. On this peculiar indoles the morbid tendencies and the treatment greatly depend, and there is no point in connection with the Eruptive Fevers so important, in a practical point of view.

647. We have but to look over the list given § 636, to see that the complications of Rubeola are of the character of adhesive inflammation: false membranes are frequently formed, and the effusion of serum is very common; ulcerations are rare, and we seldom observe either sloughs or the effusion of sanguineous fluid, as in typhus or scarlatina. The *indoles* of Rubeola is *inflammatory;* that of scarlatina, *typhoid*.

648. VII. *The Effects of Remedies; the Treatment.*

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[1] Ibid. p. 91. Compare Willan on Cut. Dis. p. 219 (note); on Vaccination, p. 33; Jenner, p. 137; 169.

[2] Reports; p. 159.

[3] Trans. of the Soc. for the Imp. of Med. and Surg. Knowledge, v. ii, p. 90.

[4] Account of the Varioloid Epidemic, 1820, p. 151.

Rubeola bears the loss of blood well. Its complications frequently require it.

649. In simple Rubeola we have, however, frequently but to *watch* the patient through the disease, giving salines, mild aperients, and tea and barley-water for diet.

650. We avoid exposure to cold for fear of repelling an eruption which is less deeply seated, less diffused, less permanent and certain, and attended with less heat, than that of scarlatina simplex or anginosa. For the same reason the cold or tepid affusion is a dubious remedy.

651. The retrocession of the eruption from exposure to cold, or the administration of purgatives, is said to occasion delirium, restlessness, difficulty of breathing, pain of the bowels, and diarrhœa, and greatly to endanger the patient's life. A case of dyspnœa from this cause is related by M. Andral[1].

652. In the cases of the *Complications*, § 636, blood-letting is *the* remedy. The patient being placed perfectly upright, and bled to syncope, § 353, it is found that there is great tolerance of loss of blood; and this tolerance is further discovered to be precisely in proportion to the diffusion and severity of such complication. Blood-letting is at once its measure and its cure!

653. This is especially true of the inflammation of the brain and its membranes, of the cellular membrane, but especially of the far more common case of inflammation of the larynx, the trachea, the bronchia, the lungs, the pleura, &c. see § 636. In all these cases we must bleed fully, and systematically. We must be guided by the effect on the symptoms, and by the quantity and appearance of the blood taken, in reference to the repetition of the remedy.

654. Blood-letting must be succeeded by antimonials and mercurials; the former in nauseating doses, the latter followed by mild aperients.

655. The *Sequelæ* of Rubeola, § 637, require the appropriate treatment of chronic inflammation, or of tubercles; and especially local blood-letting and gentle tonics, with light animal food, sea-breezes, &c. in the latter. See § 240–243.

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[1] Op. cit. ed. 2, t. i, p. 245. See Willan's Reports, p. 212.

II. *Rubeola sine Catarrho.*

656. Dr. Willan observes,—"when the measles are epidemical, a few cases occur wherein the eruption goes through its different stages without any cough, difficulty of breathing, or inflammation of the eyes; without much alteration of the pulse, or any febrile symptoms." It does not, then, "appear to emancipate the constitution from the power of the contagion, nor to prevent the accession of the Rubeola vulgaris at a future period."

III. *Rubeola nigra.*

657. Dr. Willan observes—"I never saw the Rubeola vulgaris intermixed at an early period with petechiæ: but it sometimes happens, about the *seventh* or *eighth* day, that the rash becomes suddenly black, or of a dark purple colour, with a mixture of yellow." This appearance has continued ten days, in some cases longer, with no other symptoms of fever than a quick pulse and a slight degree of languor.

II. SCARLATINA.

658. Scarlatina occurs under three forms—Scarlatina simplex, Scarlatina anginosa, and Scarlatina maligna.

I. *Scarlatina simplex.*

649. I. *The History.* Scarlatina is eminently contagious. The eruption appears after a latent period of *five* or *six* days, and on the *second* day of febrile symptoms. It consists of a close scarlet efflorescence, and first occupies the face and neck, and, in the course of another day, is diffused over the general surface, the nostrils, the inside of the eye-lids, cheeks, and lips, the tongue, the palate, and the fauces. On the *fifth* day the rash begins to decline; it disappears on the *sixth* and *seventh*, leaving the cuticle in a state of exfoliation.

660. II. *The Symptoms.* The Scarlatina begins with debility, heaviness, and slight chills, which lead to great heat and tumidity of the general surface. Numerous specks, or minute patches, of a vivid scarlet, appear about the face and neck on the *second* day. In the course of the *third* day the efflorescence becomes almost continuous over the whole surface of the body, and of a full scarlet hue, especially on the

loins, nates, and in the flexures of the joints. The rash is most vivid in the evening, and on the *third* and *fourth* days. Some papulæ appear. On the *fifth* day it begins to decline, the scarlet hue being less vivid, and the interstices between the patches augmented. See § 774, p. 172.

661. The tongue is white in the middle, of a scarlet redness at the edges, and marked by elongated vivid papillæ at the point, and edges. The face is tumid. The scarlet efflorescence may sometimes be observed over the tunica conjunctiva, and the eye is bright and humid, but without the flow of tears observed in *rubeola.*

II. *Scarlatina anginosa.*

662. I. *The History and Symptoms.* In this form of Scarlatina the febrile symptoms are more severe, the rash appears later, as on the *third* day, and is less diffused, and more in scattered patches; it sometimes vanishes and reappears; its whole duration is longer, and its colour deeper, than that of Scarlatina simplex. To the fever and efflorescence are superadded swelling of the tonsils, velum pendulum palati, and uvula, with florid redness, sloughs, and ulcerations. The voice is hoarse and the deglutition difficult, and there is cough.

663. There are frequent headache, delirium, restlessness; great heat, frequent pulse, quick respiration; languor and faintness, nausea and vomiting.

664. II. *The Complications* in Scarlatina anginosa are—

I.—*Affection of the nares, fauces, pharynx; (the glottis, and larynx?)*
II.—1. *Cephalic,*
  2. *Thoracic,*
  3. *Abdominal, Inflammation, or Congestion.*
III.—*Enlargement and softening of the parotid, submaxillary, and mesenteric glands, the kidneys, &c.*

665. III. *The Sequelæ* are,

I.—*An affection of the Joints, similar to Rheumatism.*
II.—*Inflammatory Anasarca.*
III.—*Meningitis.*

III. *Scarlatina maligna.*

666. I. *The History.* The rash, in this form of Scarlatina, appears *late*, and is uncertain in its duration: it sometimes disappears in a few hours, and reappears at the expiration of a week, continuing two or three days. In one case Dr. Willan observed its reappearance, in numerous patches, a third time, on the seventh day from the second eruption: it remained two days.

667. II. *The Symptoms.* There are dark-red flushings of the cheeks, fulness and lividity of the neck, and dull redness of the eyes. The efflorescence is usually faint, except in a few irregular patches, and presently changes to a dark or livid red colour; it is often intermixed with petechiæ. There are ulcerations of the tonsils and adjoining parts, covered with dark sloughs and surrounded with lividity. The tongue is tender and ulcerates on the slightest injury. An acrid discharge takes place from the nostrils, with soreness, chaps, and blisters, about the nose and lips. The breath is extremely fœtid. The state of the whole system is *typhoid.*

668. III. With these appearances there are in different instances the following *functional Complications:*

I.—*Deafness, delirium, coma.*
II.—*Rattling, laborious respiration, teazing hawking, and cough.*
III.—*Constriction of the jaws and dysphagia.*
IV.—*Violent pains of the bowels, diarrhœa.*
V.—*Petechiæ, vibices, hæmorrhages.*
VI.—*Vesications on the hands and feet.*
VII.—*Sudden and unexpected dissolution.*

669. Many patients sink at an early period, without any admonitory symptoms.

670. IV. There is doubtless a corresponding condition of the *structures.* But, unfortunately, there are few accurate cases of post-mortem examinations in Scarlatina maligna on record. There are, however,

I.—*Ulceration of the posterior nares, the fauces, tonsils, œsophagus, (the larynx, and trachea ?)*

II.—*Inflammation, or Congestion, in the—*

1. *Head,*
2. *Chest, or*
3. *Abdomen.*

671. An occasional event in Scarlatina, and especially in Scarlatina maligna, which should be carefully borne in mind, is that of *sudden death*,—apparently from the condition of the fauces. I imagine that a slough, in separating, has occasionally been drawn into the larynx and induced asphyxia.

672. V. *The Diagnosis.* The principal point in the diagnosis of Scarlatina is its distinction from rubeola. I shall therefore compare and contrast these two important diseases in this place :

	RUBEOLA.	SCARLATINA.
1. *The prevailing Epidemic.*		
2. *The latent period.*	From 10 to 14 days.	From 5 to 6 days.
3. *Symptoms.*	Febrile catarrh, coryza, ophthalmia.	Febrile sore throat, great heat and tumidity of surface.
4. *Appearance of the Eruption.*	On the 4th day.	On the 2nd day in S. s. 3rd in S. a. *later* still in S. m.
5. *Form of the Eruption.*	Circular dots ; crescentic arcs.	Diffused.
6. *The Indoles.*	Inflammatory.	Typhoid, and especially in S. maligna.
7. *Principal Complications.*	Affections of the anterior nares, the larynx, trachea, lungs, &c.	Affections of the posterior nares, fauces, &c.

8. *Principal Sequelæ.*

Thoracic disease.	Inflammatory anasarca; meningitis.

673. The contagion of Scarlatina is altogether *more active* than that of Rubeola: the latent period, the period which intervenes between the beginning of the febrile symptoms and of the rash, are both shorter.

674. In reference to the Scarlatina *maligna*, it may be observed that the rash is later in its appearance, more uncertain in its duration, less diffused, less frank altogether, than the Scarlatina anginosa; it is also faint and livid, and mingled with petechiæ; there is less heat of surface, less tumidity; the fauces are sloughy, ulcerated, and attended by an ichorous discharge.

675. VI. In reference to the *Indoles* of these two diseases, I would remark that Rubeola principally attacks the parts of the respiratory organs *below*, whilst Scarlatina is chiefly situated *above*, the *glottis*. This important point appears to be the *boundary* of the internal affection in both these affections respectively.

676. Another distinction is, that in severe cases of Rubeola there is the constant tendency to the deposit of albumino-fibrine; in Scarlatina, on the contrary, there is the disposition to ulceration, and slough, and ichorous discharges. Blood-letting is the remedy in the former case; cinchona, in the latter.

677. I need not observe that these observations are very general. Bateman[1] and Laennec[2] have both seen cases of croup in connexion with Scarlatina. With their observations we may contrast the remarks of M. Bretonneau, who states that, during twenty years, he had not observed the affection of the fauces to extend to the larynx[3].

678. VII. *The Morbid Anatomy* of Scarlatina is as little known as that of rubeola. M. Louis observes, "I have observed, in five subjects, in the latter portion of the ileum, disease of a greater or less number of the *solitary* glands, which

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See Reports on the Diseases of London, p. 191.

[2] Op. cit. t. i, p. 246, 251, &c.

[3] De la Diphthérite; Paris, 1826, p 249.

were more or less developed, white or reddish, and this appears to me to be worthy of attention; three of these cases were individuals who had died of Scarlatina, the only ones attacked with this affection which I have examined. This would seem to indicate that the development of these glands (supposing such to be the lesion in question) is, if not constant, at least very frequent amongst those who die of this affection[4]." The whole subject is open to new inquiry. The particular condition of the skin, of the mucous membranes, of the parenchymatous textures, of the blood, &c. is still unknown.

679. VI. *The Treatment.* The remedies in Scarlatina are those of the synochus acuta (§ 447), or of typhus (§ 537), according as it assumes the simple, anginous, or malignant forms. In the first case, an emetic, a mild dose of hydrargyri submurias, a mild aperient, mild antimonials, and salines, are the proper remedies. The angina may require blood-letting, general, but especially local. The malignant form requires the cinchona, and remedies directed to the sad condition of the posterior nares and fauces, such as the inhalation of steam, gargarisms with the chloride of soda, the nitrate of silver, &c., external fomentations, &c.

680. The principal continued treatment is the regulation of the bowels, the diet, the temperature, &c. The bowels should be well moved daily; the diet should be mere barley-water, or gruel; the atmosphere of the room should be fresh and cool; and, if there be much heat of skin, the tepid or cold affusion should be used. The cold affusion was particularly recommended by the late Dr. Currie. He observes, "I must *again* enforce the superior advantage of using the affusion early in this disease; and the propriety of ascertaining that the skin is dry, and the heat of the patient greater than natural, in all cases, especially in such as are advanced, and where, of course, the strength is considerably impaired. It has come to my knowledge, that in two cases of Scarlatina, of the most malignant nature, the patients have been taken out of bed, under the low delirium, with the skin cool and moist,

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[4] De la Gastro-entérite; t. i, p. 222.

and the pulse scarcely perceptible. In this state, supported by the attendants, several gallons of perfectly cold water were madly poured over them, on the supposed authority of this work! I need scarcely add, that the effects were almost immediately fatal[1]."

681. A free state of the bowels is the most important preventive of the inflammatory anasarca, so apt to follow Scarlatina. When this sequela does occur, blood-letting is the principal remedy, both for the anasarca itself, and as a preventive of meningitis.

682. In the case both of anasarca, and especially of meningitis, there is an extraordinary power of bearing the loss of blood. Again, the plan of blood-letting which I have proposed becomes the most important guide in practice, in the diagnosis, and further treatment of the disease.

III. VARIOLA.

683. Variola varies extremely in severity, and, according to the abundance and form of the eruption, is designated the *distinct* or the *confluent*. There is also another form of this disease, the *modified*, which occurs after a previous attack or after vaccination.

I. *Variola discreta.*

684. I. *The History.* The unique cause of Variola is contagion. The latent period is from *twelve* to *fourteen* days[2]. There are febrile symptoms, on the *fourth* day of which the eruption generally appears. Sometimes there is vomiting, sometimes an attack of epilepsy.

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[1] Medical Reports, vol. ii, p. 76.

[2] "Dr. Rutherford, my learned master, in his Lectures on the Practice of Physic, to ascertain the time the natural infection of the small-pox is latent before it produces the fever, mentioned the case of a party of soldiers marching through a village where the disease was; they were seized from twelve to fourteen days afterwards with the fever, and that this was the usual time."—Fordyce; Trans. of a Society for the Improvement of Med. and Surg. Knowledge, v. i, p. 5.

Heberden observes, "Parentibus aliquibus visum est, siquidem unus ex liberis in variolas incidisset, non amovere reliquos, sed sinere ut omnes una manerent in eadem domo, aut etiam in eodem cubiculo. At sexto plerumque die postquam morbus ad ακμην pervenerit, sani pueri cœperunt ægrotare."—Commentarii, pp. 379. Eight days (the acme), added to six, make *fourteen*.

685. II. *The Symptoms.* The early symptoms are febrile chills, heat, and diffuse perspiration; languor, pain of the head and back, and tenderness of the epigastrium. The eruption first appears on the face, neck, and breast, and spreads on the next day over the general surface of the body, the febrile symptoms abating.

686. On the *first* and *second* days of the eruption (the *fourth* and *fifth* of fever) the inflamed points are *papular*, small, hard, and globular, red and painful, separate and distinct from each other, with nearly colourless interstices.

687. They enlarge gradually, and on the *third*, *fourth*, and *fifth* days they become *vesicular*, containing a little yellowish fluid, and the interstices become red.

688. During the *sixth* and *seventh* days the variola assumes a very peculiar character: it consists of concentric rings, of which the exterior and anterior are opaque and pustular; the intermediate one vesicular and still transparent,; it may be therefore denominated *vesiculo-pustular*. It is further distinguished by a *central indentation*, and a *surrounding ring of rose-coloured inflammation*, which frequently coalesces with those of adjacent pustules, when the eruption is numerous.

689. On the *eighth* day the eruption is perfectly *pustular*. The central indentation remains.

690. On the *ninth* and *tenth* days the pustular character is still retained, but the central indentation has given way, and the form is *orbicular*. The pustules are said to be ‘full at the top of the pock.’

691. On the *eleventh*, *twelfth*, and *thirteenth* days, the pustules burst and form *scabs*.

692. After this period the scabs fall off, leaving the subjacent parts brown and pitted, a minute portion of the cellular membrane having sloughed and separated.

693. The course of the eruption is most distinct on the face; less so on the extremities; it is *shorter* in the very *distinct* cases; a little protracted and less regular in the more confluent. From these circumstances the enumeration of the days or periods of the eruption is but approximative.

694. I shall here insert a little table of these appearances of the eruption of Variola:

On the	1 2	days it is papular.
———	3 4 5	——— vesicular.
———	6 7	——— indented, annular, vesiculo-pustular, and areolated.
———	8	——— pustular.
———	9 10	——— orbicular.
———	11 12 13	——— burst, and formed into scab.

695. About the *fourth* day there is frequently an increased flow of saliva, and the integuments of the face are apt to become tumid, the eye-lids being swollen, and sometimes closed; this tumefaction gradually declines, and, about the *seventh* day, is often replaced by swelling of the hands and feet, the salivation and perspiration ceasing.

696. III. *The Complications* in the Variola discreta are,

I.—*Variolous Inflammation of the*
  1. *Eyes;*
  2. *Mouth;*
  3. *Throat;*
  4. *Epiglottis, Larynx, Trachea, and Bronchia;*
  5. *Pharynx, Œsophagus, Stomach, and Intestines.*

II. *Inflammation within the Head:*
  1. *Of the Membranes;*
  2. *Of the substance of the Brain.*

III. *Inflammation within the Thorax:*
  1. *Pleuritis;*
  2. *Pneumonia;*
  3. *Pericarditis*[1].

IV. *Inflammation of the Peritonæum.*

V. *Inflammation of the Joints.*

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[1] See Andral, Clinique Médicale, ed. 2, t. i, p. 30.

II. *Variola confluens.*

697. I. *History and Symptoms.* The early symptoms of this form of Variola are *typhoid;* there is delirium, or coma, vomiting, diarrhœa, cool perspiration, labour in breathing, a feeble, frequent pulse. The eruption appears *early*, on the *third* day, and induces less, and less permanent, relief of the febrile symptoms, which resume their violence on the *sixth* day; it is preceded or attended, in many instances, by exanthematous redness.

698. The pustules are more numerous on the face; smaller and less hard and eminent than the variola discreta; during a *slower* and less marked progres, their diameters enlarge; they do not retain the circular and orbicular form, but assume an irregular figure, remain flat, and coalesce, so that frequently the face seems covered with one extended and continuous pustule. The interstices are pale and flaccid, and without the rose-coloured inflammation observed in the variola discreta. The contained fluid becomes opaque and brownish, and does not assume the yellow, consistent, and purulent appearance. The pustules at length break, the cuticle shrivels up, the enclosed fluid issues; dark-brown scabs are formed, separate slowly, and leave deep pits.

699. The tumefaction of the face, and the salivation, take place earlier, and are more considerable than in the variola discreta; they abate, and the hands tumefy, about the *seventh* day.

700. On the general surface the pustules are more distinct; but they are less prominent, and the enclosed matter less consistent, than in the former variety.

701. In this form of Variola, the pustules are less distinct from each other, and in their form, progress, and stages; less distinctly indented; less circular; less orbicular; less disposed to suppurate, and more to form sanies and slough, than in the Variola distincta; the febrile symptoms are not only more typhoid, but they are less relieved on the appearance of the eruption, and they recur about the *sixth* day; the tumefaction of the face and the salivation occur earlier, then abate, being succeeded by swelling of the hands about the *seventh* day.

702. II. *The Functional Complications* of the Variola confluens are—

I.—*Cephalic:*
  1. *Delirium;* 2. *Coma;* 3. *Subsultus;* 4. *Spasm, &c.*
II.—*Thoracic:*
  1. *Cough;* 2. *Rattle;* 3. *Dyspnœa, &c.*
III.—*Abdominal*:
  1. *Vomiting;* 2. *Diarrhœa;* 3. *Melæna;* 4. *Hæmaturia;* 5. *Menorrhagia.*
IV.—*Integumental:*
  1. *Petechiæ;* 2. *Vibices;* 3. *Livid Vesicles;*
  4. *Gangrenous Ulcers;* 5. *Anasarca, &c.*

703. III. *The Structural Complications are,*

I.—*Variolous Ophthalmia.*
II.—*Ulcerations*—1. *of the Mouth, Fauces, and Pharynx;*
  2. *of the Stomach, Intestines, &c.*
III.—*Ulcerations*—1. *of the Epiglottis and Glottis;*
  2. *of the Larynx and Trachea.*
IV.—*Cerebral Congestion.*
V.—*Thoracic Disease:*
  1. *Bronchitis, with bloody mucus;*
  2. *Congestion of the Lungs;*
  3. *Pleuritic, Serous, Purulent, or Sanguineous Effusion.*
VI.—*Abdominal Congestion.*
VII.—*Glandular Swellings.*
VIII.—*Swelling and Stiffness of the Joints.*

704. IV. The *Morbid Anatomy* of Variola is amongst the most interesting of the subjects still requiring investigation: it consists of,

705. 1. The pustular form of inflammation of the mucous membranes. Of all the mucous membranes, that lining the air passages suffers the most[1]; the whole of the alimentary canal is subject to variolous inflammation, but chiefly the appendix vermiformis cæci[2].

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[1] For sketches of Variola affecting the trachea, my reader may refer to M. Rayer's plates of Cutaneous Diseases; pl. vi, fig. 11; and Dr. Carswell's plates of Pathological Anatomy, fig. 8, pl. I, fig. 6.

[2] M. Rostan observes, Cours de Médecine Clinique, ed. 2, t. ii, p. 201, "J'ai

706. 2. Inflammation of the serous membranes, in regard to which the *peculiarity* of form is not either established or refuted.

707. 3. Inflammation of the parenchymatous substance of organs, as of the brain, the lungs, &c.

708. I insert in this place an interesting case of Variola from the pen of Sir Gilbert Blane :—" Charles King, a common sailor belonging to the Conqueror, was admitted on the 1st of March, 1783, into the Naval Hospital at St. Lucia, on the fourth day after being attacked with fever, and just as the eruption of the small pox was becoming visible. The pustules, which followed, were flat from the beginning, and blackish in the middle ; and they continued to wear this appearance till his death, which happened on the 19th of the same month. There was no matter in the pustules, except on the hands, and there it was of a very thick consistence. They were very numerous, and in some parts confluent. The scrotum, prepuce, and glans penis, began to mortify before he died.

709. " The cavity of the abdomen being exposed, the intestines appeared to be perfectly sound in their outer surface ; but, on their being slit open from the stomach to the rectum, both included, the whole inner surface was found beset with small round ulcerated spots. The same appearance was found on the inner surface of the œsophagus. These spots were most crowded in the duodenum, and in the great intestines they were of a dark colour in the middle, like the small pox on the surface of the skin.

710. " The villous coat of the stomach, near the pylorus, had the appearance of being much inflamed.

711. " The liver and kidneys were sound. The gall-bladder was full of viscid bile.

712. " On the inner surface of the trachea, the same sort of ulcerated spots was found as in the intestines, and they were continued on the bronchia as far as their ramifications could be traced. All these surfaces bore the appearance of having been in a state of inflammation.

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vu un canal alimentaire garni des mêmes pustules que celles de la bouche depuis l'œsophage jusqu'au rectum."

713. "Tubercles were found on the right lobe of the lungs, but neither hard nor suppurated. The whole of this side of the lungs had a turgid and inflamed appearance. On its uppermost extremity there was a cicatrix, the vestige of some old injury; and upon cutting into it, there were found small white hard bodies, of the consistence of horn or cartilage. The lungs on the left side were sound in every respect.

714. "The brain being examined, the lateral sinuses, particularly the left, were found remarkably turgid with blood, and their coats were considerably thickened, and of a firmer texture than natural, with a number of very small, clear, globular bodies adhering to their internal surface. There was a red suffusion, or increased vascularity, on the fore part of the cerebellum[1]."

715. But the *Pathology* of Variola has been more recently and particularly investigated by Dr. Heming, in this country, and by M. Velpeau in France. The former author considers the variolous pustule as an inflammation of the sebaceous glands of the skin, and of the mucous follicles in the mucous membranes. It is in this manner that the central indentation of the variolous pustule is explained: it is formed by the duct of the inflamed gland, and constitutes the specific distinction between variola and varicella. It is in this manner that the presence of variolous inflammation in the mucous membranes, and its absence in the serous membranes, are also explained.

716. Dr. Heming observes, "although I have spoken of the variolous pustule as affecting the follicles of the mucous membrane, such pustules are never perfect; the presence of a cuticle being required to form the perfect pustule. The variolous affection of the mucous membrane assumes, first, the form of an inflamed point, then becomes an ulcer, and then passes into a state resembling that in aphthæ.

717. "The variolous affection is to be seen in some part of the track of the mucous membrane, in almost every case of the disease; but in no single case in great number. It is equally true that the mucous follicles pervade the whole of

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[1] Trans. of a Soc. for the Imp. of Surg. and Med. Know. vol. iii, .425.

these membranes. There are some parts of the mucous membranes, as on the tongue, the palate, and the mouth generally, covered by a cuticle of sufficient thickness occasionally to allow of being distended by fluid effused underneath, and, consequently, of the formation of a pustule. But, in most parts of the mucous membranes, there is either no cuticle, or it is so thin as not to allow of distention by the subjacent effusion of fluid: in these, of course, no pustule can be formed; but we observe the mucous follicle enlarged by inflammation, covered by a layer of whitish matter, very much resembling that in aphthæ, and sometimes ulcerated. Whether one or other of these appearances be found, will depend upon the different periods of the disease at which the examination of the mucous membranes takes place. It is a curious fact that, throughout the mucous lining of the bowels, extending from the stomach to the rectum, there is no portion of it where the mucous follicles are so frequently affected by small-pox as in that of the appendix vermiformis.

718. "In regard to any affection of a serous membrane, I must repeat that I have never observed anything either pustular or of the character of the affection of the follicles of the mucous membrane, which I have just described[1]."

719. V. *The Treatment.* The principles of the treatment are the same as in synochus, typhus, scarlatina, and all other fevers, and consist in attention to the following points:

1. *A free state of the bowels.*
2. *Mere barley-water, or tea, for diet and beverage.*
3. *A cool or temperate state of the atmosphere.*
4. *Perfect repose in the recumbent position.*

720. It thus only remains to watch, as *in all fevers*, for the occurrence of *complications*, and meet each with a prompt and appropriate remedy. See § 447—453; 537—555, &c.

721. In stating the treatment of Variola, I must not omit to mention that it has been proposed to interrupt the progress of the eruption on the face, and to prevent pitting,

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[1] Med. and Phys. Journal, New Series, vol. vii, p. 189.

by applying the nitrate of silver. This mode of treatment has been carried much farther lately by M. Gariel fils: this gentleman has covered the face, or considerable portions of the face, with various applications, with the effect of preventing the progress of the eruption and of greatly mitigating the constitutional disease.

722. Besides the *Distinct* and *Confluent* forms of Variola which have been described, Dr. Thomson has described, in his interesting volume on the 'Varioloid Epidemic' two other forms of Variola—

1. *The Mild-Vesicular.*
2. *The Vesiculo-Pustular.*

723. In the *mild vesicular* form of Variola, "the eruption has been almost always papular in its origin. In a small number of cases, in which the eruption has been scanty, the papulæ have become vesicular on the first or second day, have continued such nearly till their disappearance, which has usually happened before the end of the fifth or sixth day, and have left behind them only a slight roughness, or small thin scales upon the skin. The cases to which I allude have occurred in situations in which confluent and malignant small-pox existed, and to the contagion of which they could be distinctly traced. Had it not been for this circumstance, I should never have had any doubt of these cases having been examples of genuine chicken-pox. This variety might be termed *mild vesicular* small-pox."

724. In the *vesiculo-pustular*, "the papulæ have from the first appeared vesicular, the vesicles, after continuing pellucid for two or more days, have become filled with a whitish fluid, sometimes resembling milk, and sometimes pus, which dried into small crusts or scabs. It was impossible, during the vesicular state of the disease in these cases, to say, whether the vesicles would become pustules; whether, when they became pustules, they would continue prominent, or become depressed in their centres; and whether they would decay by the sixth or by the ninth day. In this variety, though the disease might have been regarded as chicken-pox in its commencement, it was impossible, by any

characters with which I am acquainted, to have distinguished it from small-pox, in its termination. This variety may be termed *vesiculo-pustular* small-pox."

725. It will be obvious, at once, that a strict attention is required to *all* the varied forms of Variola, as it occurs in the unprotected, before we can either judge of the effect of previous Variola, or of Vaccinia, in *modifying* the subsequent Variola, or enter into the question whether Varicella be a distinct or a merely modified disease. I now proceed to describe what is universally admitted to be—

III. *Modified Variola.*

726. This form of Variola occurs, 1. after previous Variola, natural, or inoculated; 2. after Vaccination.

727. Mr. Bryce observes that such a second attack of Variola has at all times been a more frequent occurrence than is generally imagined; that the disease then assumes a milder form, and has been denominated *horn-pock* or *stone-pock;* and that it arises from the contagion of Variola, and is capable of inducing Variola in the unprotected[1], in its turn.

728. This form of Variola is distinguished by presenting small inflamed papulæ, which become vesicular or partially pustular, increase to the *fourth* and *fifth* day, and then decline, forming horny crusts, raised upon a firm tubercular base, which is distinctly perceived by the finger, if the effused fluid be evacuated on the *third* day.

729. Mr. Bryce observes, " Since the time of the introduction of vaccination until lately, I have seldom had occasion to see the small-pox epidemic under a very severe form, and then the eruptions which appeared occasionally amongst the vaccinated on exposure to small-pox contagion, were almost entirely of that hard and tubercular kind which has been denominated the horn-pock; of late, however, while the small-pox raged in the neighbourhood, and in several other districts in Scotland, under a more severe form than had been known in this country for perhaps upwards of forty years, the eruptive disease, with which those who had

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[1] Thomson on the Varioloid Epidemic, p. 59.

been vaccinated, as well as those who had formerly undergone an attack of small-pox, have been frequently affected, has also been observed to be considerably more severe; the eruption has been more numerous, and it has approached nearer in its progress to cases of mild and distinct small-pox, having been in many instances papular, vesicular, and frequently pustular, in succession. Of this kind I consider to have been the case of Dr. Monro's eldest son, and also some other cases which I had an opportunity of seeing about the same time. Most of these cases have, from their appearance, and the progress of their symptoms, been called chicken-pox by many medical men of great eminence and experience. I have long, however, regarded them to be, and it is a satisfaction to me to find that my opinion agrees with your observations that they really are, cases of small-pox, modified or rendered milder by previous vaccination, or by a previous attack of small-pox; and I am well convinced that this nearer approach to regular small-pox than what I formerly observed, is entirely to be attributed to a greater malignancy than usual in the nature of the lately prevailing epidemic; and from what I have seen, I will venture to predict, that as the epidemic small-pox becomes more mild, the cases of eruption after vaccination will also become more mild, and that they will then be again generally observed under the form of that slight affection, the horn-pox[1]."

730. This form of Variola appears to be the same as that observed by Dr. Thomson, (whose description is given § 723, 724), with which this latter gentleman is disposed to rank the varicella, considering it also as a modification of Variola.

IV. *Varicella.*

731. I. *The History.* This eruptive disease was first distinguished from variola by the late Dr. Heberden[2], and recently, more particularly by Mr. Bryce[3] and Dr. Abercrombie[4]. It arises from contagion, and appears after a

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[1] Thomson, op. cit. p. 62-64.

[2] Trans. of the Col. of Physicians, v. i, p. 427; and Commentarii.

[3] Thomson, op. cit. p. 59.

[4] Ibid. p. 183.

latent period of about *fourteen*[1] days. The following is Mr. Bryce's beautiful description of its *symptoms*:

732. "This eruptive disease generally attacks with little or no fever, the appearance of vesicles on the shoulders, neck, and breast, being often the first symptoms observed. The vesicles are often, when first seen, about the size of a split pea, perfectly transparent, and covered only by the cuticle, as thin as that separated by a scald or by a blister; they generally have at first an inflamed areola, but this seems also to be confined to the cuticle, and there seems to be little if any hardness in the true skin beneath or around them. On puncturing the vesicle, the clear lymph is wholly evacuated, the cuticle falls flat down, and very little if any hardness is perceived on passing the finger over the collapsed vesicles. The vesicles generally increase in number for several days; and while new vesicles are appearing on some parts of the body, those which had first come out are beginning to shrivel, and the fluid contained in them has become somewhat milky. Many of them are broken by the second or third day, and have a small crust formed on the cuticle, which adheres to the skin beneath, and is surrounded by an opaque or milky fluid, confined by the shrivelled cuticle. When the eruption is numerous, the body has the appearance of having been exposed to a shower of boiling water, each drop of which had occasioned a vesicle or blister: and these are generally, on the second and third day, when turgid, broader at the summit than at the base. When the vesicles remain unbroken for four or five days, as is sometimes the case, the covering of cuticle, as well as the contained fluid, becomes opaque, and the latter purulent. The vesicle is then much flattened, and in this stage of the disease it is scarcely to be distinguished from small-pox, unless by the very thin, delicate, and shrivelled appearance of the covering cuticle[2]."

733. Mr. Bryce adds[3], in reference to the question of identity or difference of variola and varicella, that—

734. "1. The character of this vesicular disease, or the

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[1] The daughter of a friend visited a little girl affected with Varicella; the eruption appeared that day fortnight; it appeared in her sister and in her brother on the thirteenth and fourteenth days afterwards.

[2] Thomson, op. cit. p. 64.

[3] Ibid. p. 75.

chicken-pox, particularly during the first three days of the eruption, appears extremely unlike the character of the small-pox.

735. "2. When this disease affects the unvaccinated, it maintains a character as mild and purely vesicular, as when it affects those who had been vaccinated.

736. "3. Children who have been affected with this disease, have, within a month afterwards, undergone the process of vaccination in the most regular manner.

737. "4. There is great difficulty, if not impossibility, of propagating this disease by inoculation.

738. "5. I have never observed this disease giving rise to small-pox, nor small-pox giving rise to this disease."

739. Dr. Willan describes three forms of varicella:

1. *The V. lenticularis, or Chicken-pox.*
2. *The V. conoidalis, or Swine-pox.*
3. *The V. globata, or Hives.*

740. It will be well to bear in mind the various appearances which these epithets sufficiently describe, in prosecuting our investigations into the diagnosis of this interesting disease.

741. III. In reference to the *Pathology* of Varicella, I have only to remark, that whilst variola appears to be a specific inflammation of the sebaceous glands, Varicella seems to consist in inflammation of the subcuticular cellular membrane more indefinitely: there is *no* central *indentation*, *no* tuberculous *hardness;* there is superficial *vesication* rather than deeply seated *suppuration.*

742. IV. In general, *no treatment* is required: an open state of the bowels; barley-water for diet and drink; a cool atmosphere; perfect quiet and repose, are the sole remedies.

VACCINIA[1].

743. I. *The History.* According to Dr. Jenner, the mat-

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[1] "The most valuable communication ever made to the public."—*Wollaston.*—*Baron's Life of Jenner*, p. 374.

"The discovery of Vaccination as a preventive of Small-pox, is the most important event which the History of Medicine can furnish," and "has conferred immortality on the name of JENNER."—*Willan.*

ter of the *Grease*[1], a disease in the heel in horses, is conveyed to the nipple of cows, and thence to the dairy-maids who are "for ever after secure from the infection of small-pox!"

744. On the nipple of the cow it appears in the form of irregular pustules, which are, at first, of a palish-blue or livid colour, and surrounded by inflammation; these pustules are apt to degenerate into phagedenic ulcers.

745. On the fingers and wrists of the milkers inflamed spots appear, issuing in small vesications and superficial suppurations, of a circular form, with edges more elevated than the centre, and of a colour distantly approaching to blue. There is fever, but no general eruption.

746. These facts, vaguely known to the people of Gloucestershire, remained barren and fruitless until they suggested to the philosophic mind of Jenner the idea of Vaccination with all its momentous consequences!

747. II. *The Characteristics of Vaccinia.* On the *third* day after Vaccination, an inflamed point is observed, and this is augmented on the *fourth* day with *redness* and *hardness* under the finger. On the *fifth* day a small pale *vesicle* is observed, which is turgid and depressed in the centre, and *without areola.* On the *sixth* and *seventh* days the vesicle enlarges, remains circular, with a regular and well-defined margin, more turgid edges, more depressed centre with a small crust.

748. At this period the vaccine vesicle is strongly characterized, and very different from variola: it is divided into distinct cells, like a honey-comb, so that a puncture does not evacuate the whole of the fluid, as in the latter disease; and, unlike variola, it is free from surrounding areola.

749. It is between the *seventh* and *eighth* days that an inflamed areola *begins* to form. This augments during the *ninth*, *tenth*, and *eleventh* days, remaining circular, and becoming, from one and a half to two inches in diameter, deeply red, hard, and tense. The central crust becomes darker, and the turgid margin shining, as if the lymph were assuming the character of pus.

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[1] Compare Jenner's Inquiry into the Variolæ Vaccinæ, 1803, p. 1—8; and Bryce on the Inoculation of Cow-pox, ed. 2. Edinb. 1809, p. 17; 22.

750. About the *eleventh* day the vesicle has attained its acme, and the surrounding areola begins to subside, *from* the *centre towards* the *circumference*, where it leaves at last a mere *ring*.

751. The fluid in the vesicle becomes turbid, and rapidly forms into a smooth, shining, semi-transparent crust of a dark-brownish colour. This crust sometimes adheres for one or two weeks. " It leaves a permanent circular cicatrix, about five lines in diameter and a little depressed, the surface being marked by many minute *pits* or indentations, denoting the number of cells, of which the vesicle had been composed[1]."

752. In some cases there are chills, fever, and headache; but these usually soon subside.

753. III. *The Diagnosis*. The vaccine vesicle should be carefully examined every *third* day—the *fourth*, the *seventh*, the *tenth*, and the *thirteenth* from inoculation. The appearances at these periods are stated in the following table, which may be compared with that, § 694.

On the 4th day there is a distinct hardness.
——— 7th ———— a distinct circular vesicle, of a cellular structure, with a central indentation and crust, and an elevated margin.
——— 10th ———— a vesicle at its acme; an enlarged central crust; a turgid, cellular margin; a red, hard, tense, and broad areola.
——— 13th ———— a hard crust; areola gone.

754. Very different is the result of inoculation of variola: in this case the cutaneous affection consists of *several distinct pustules*, which unite and give an irregular form; there is no central crust; the contained fluid is formed in *one cavity*, becomes distinctly *purulent*, and dries into a thin, rough, and *opaque* scab. In the case of variolous inoculation we have also an eruption of pustules on the general surface, and a contagious disease.

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[1] Willan on Vaccination; p. 10.

755. The phenomena described § 747—751, leave no doubt in reference to the perfection of the vaccine vesicle. But we are indebted to Mr. Bryce for a further criterion of true and perfect vaccination. This criterion consists in the result of *reinoculation* on the *fifth* or *sixth* day.

756. If the *previous* vaccination has been efficacious, the second induces a miniature vesicle, which runs its course more rapidly. The areola, which appears on the *seventh* or *eighth* day of the *first* vaccination, appears very shortly—a few hours—later, only, in the *second;* the two areolæ then *augment* and *fade*, *together!*

757. This *test* of perfect vaccination is beautiful, both in principle and·practice[1]. Dr. Jenner observes, in a letter to Mr. Bryce, dated April 5th, 1803, "I much admire your precaution in using a *test* of the certainty of infection; and your ingenuity in the manner in which you employ it. To all young vaccinators it cannot be too strongly enjoined. The *experienced* will determine from the character of the pustule. The evidence before the House of Commons evinces the propriety of your observations[2]."

758. Whenever *any* deviation from the perfect and genuine vaccine vesicle arises, common prudence, as Dr. Jenner remarks, points out the necessity for revaccination. It may be well, however, to notice the different forms of the

II. IMPERFECT VACCINIA.

1. *The Vaccine Pustule.*
2. *Ulceration.*
3. *Irregular Vesicles.*
4. *Deficient Areola.*

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[1] Mr. Bryce was led to this discovery by remembering some experiments in inoculation for variola. He observes, "It was found, if the person was inoculated every day until the fever induced by the first inoculation supervened, all the other punctures quickly advanced in their progress; and that, in the course of a day from the time the fever or general affection began, even that puncture which had been last made, perhaps only twenty-four hours before, equalled in maturity the one first made, perhaps eight or nine days before, and from which the fever had arisen." On the Inoculation for Cow-pox, by James Bryce, F.R.S.E., ed. 2; Edinb. 1809, p. 159.

[2] Baron's Life of Jenner, p. 536.

759. I. *The History.* It has been ascertained that Vaccination is imperfect or insufficient,—1, When the fluid employed has lost some of its properties. 2, When persons inoculated are soon afterwards affected with any contagious or eruptive fever. 3, When they are affected at the same time with some Cutaneous Disorders, as Herpes, Psoriasis, Impetigo, Lichen, Porrigo; and perhaps Scabies and Prurigo.

760. The pustule or ulceration may arise from the use of effete or altered virus, or from the presence of chronic cutaneous eruptions. The vesicle without an areola arises when the patient has previously received the infection of small-pox, or is affected with any other contagious disease.

761. II. *The Symptoms.* Imperfect Vaccination is denoted, in different instances, by the appearance of pustules, ulcerations, or vesicles of an irregular form:

762. 1. The Vaccine Pustule is conoidal; it increases rapidly from the *second* to the *fifth* or *sixth* day, when it is raised on a hard inflamed base, with a premature diffuse redness extending beyond it on the skin. It is usually broken before the end of the sixth day, and is soon after succeeded by an irregular yellowish-brown scab. The redness disappears within a day or two, and the tumor gradually subsides. This pustule resembles the suppuration induced by the presence of a thorn; it contains a straw-coloured opaque matter.

763. 2. The Ulceration probably arises from the vaccine pustule, when it is rubbed or scratched off at an early period.

764. 3. The Irregular Vesicles are of three kinds. 1, A single pearl-coloured vesicle, set on a dark-red base, slightly elevated. It is larger and more globate than the pustule; but it is much less than the genuine vesicle, its top is flattened, or sometimes a little depressed, but the margin is not rounded or prominent. The areola is usually diffuse, and of a dark rose-colour. 2. A vesicle which appears cellular, like the genuine Vaccination, but somewhat smaller, more sessile, and having a sharp angulated edge. The areola is sometimes of a dilute scarlet colour, radiated, and very extensive, as from the sting of a wasp; sometimes it is less

extensive.—The areola appears round these vesicles on the *seventh* or *eighth* day after inoculation, and continues more or less vivid for three days, during which time the scab is completely formed; it is smaller and less regular than that which succeeds the genuine vesicle, falls off sooner, and leaves a smaller cicatrix, which is sometimes angulated. 3, The third Irregular vesicle is unattended with areola.

765. Under this head I must present my reader with the facts ascertained by Dr. Willan relative to the reciprocal influence of Variola and Vaccinia. Dr. Willan observes[1]—

766. " 1. When a person is inoculated with vaccine and variolous matter, at the same time, both inoculations prove effective; the vaccine vesicle proceeds to its acme in the usual number of days, and the maturation of the variolous pustule is attended with a pustular eruption on the skin.

767. " 2. These effects take place without much variation, when the *interval* between the two inoculations does not exceed a week; but when variolous matter is inserted on the *ninth* day after the vaccine inoculation, its action seems to be wholly suspended.

768. " The vaccine and variolous fluids, inoculated about the same time, do, however, restrain the action of each other on the human body[2], so that in some cases the vaccine vesicle is smaller than usual, and has a very slow progress; in other cases the areola is scarcely perceptible; while, in others, it is large but premature:—the variolous eruption consists of hard, distinct, shining pustules, which have but little inflammation around them, and which seldom maturate. Some of these pustules are tuberculated. The small quantity of matter in them soon disappears, leaving the cuticle which confined it horny and elevated for many days afterwards. The rest of the eruption is minute and papulous, not suppurating, but desquamating[3]."

769. The variolous pustule and the vaccine vesicle, *in these cases*, produce, by inoculation, variola and vaccinia respectively; the double inoculation does *not*, therefore, induce, as was formerly imagined, a *hybrid* disease.

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[1] On Vaccination, p. 2.

[2] Compare § 755—; and p. 169, note.

[3] Willan on Vaccine Inoculation, p. 4.

770. *Of Inoculation.* The transparent lymph of the vaccine vesicle is the proper material for inoculation. At an early period of the vesicle, as the *fourth* day, its quantity is too small; during the *seventh*, *eighth*, and *ninth* days, sufficient lymph exudes, on making several incisions through the cuticle into the *cells* of the vesicles, and waiting a minute or two. At a *later* period this lymph dries into the transparent crust which has been described § 751; but a degree of *suppuration* goes on underneath: this *pus* is inert, of course, being the result of mere common inflammation, but the *source* of many errors on the part of the early vaccinators.

771. The lymph thus obtained is allowed to dry, and is then preserved between pieces of thin plate-glass. It is dissolved by pure water when required for vaccination. The *transparent* crust may be used for the same purpose.

772. Variolation was not *always* safe to the individual, and was a source and centre of contagion to the public; but

773. Everything in the history of Vaccination concurs to render its victory over Variola as complete as any achievement in medicine!

774. I omitted to mention, p. 148, that, as in S. simplex, there was the *rash* without the sore-throat, so, during the prevalence of Scarlatina, an affection of the throat frequently occurs, in those exposed to the contagion, without rash on the skin.

CHAPTER III.

ON RHEUMATISM, ARTHRITIS, ERYSIPELAS, ETC.

774. THE diseases of which I have hitherto treated, are, principally, diseases of the general system, to which local complications are frequently added. The same remark may properly be applied, although with a less degree of force, to the diseases which I am now about to bring under the notice of my reader.

775. Pure inflammation itself has been considered by some observers as the result of a previous febrile affection[1]. It is more generally regarded, however, as the cause of the accompanying fever. What shall we say of Rheumatism? There can be less doubt of the constitutional origin of Arthritis, of Erysipelas, of Furunculus, Paronychia, and Carbuncle.

776. Whenever a disease arises from a constitutional source, it is apt to appear in more organs or parts than one:—Now, we have occasionally inflammation in several organs simultaneously: meningitis, and especially pleuritis, occasionally co-exist with peritonitis; occasionally pleuritis, or pneumonia is double, or combined with pericarditis. In such cases there is generally a constitutional cause in operation, and the malady bears a far more serious prognosis. But Rheumatism is, in general, a more diffused disease: externally and internally it is apt to assail several parts simultaneously. As to Arthritis, there is little doubt that it is of constitutional origin; and the same remark applies to Erysipelas, boil, whitlow, and carbuncle.

777. This is a *practical* view of the subject. The modes of prevention and of the treatment are alike sug-

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[1] See *particularly* the Examen de l'Examen de M. Broussais, par M. Louis; Paris, 1834; p. 36—38.

gested by it: diseases apparently so dissimilar, are thus naturally and usefully grouped together:—

- I. INFLAMMATION.
    - I. *Serous.*
    - II. *Parenchymatous.*
    - III. *Mucous.*
- II. RHEUMATISM.
    - I. *Acute.*
        - 1. *External.*
        - 2. *Internal.*
    - II. *Chronic.*
- III. NODOSITY.
- IV. ARTHRITIS.
    - I. *Acute.*
        - 1. *External.*
        - 2. *Internal.*
    - II. *Chronic.*
- V. ERYSIPELAS.
    - I. *Phlegmonodes.*
    - II. *Erraticum.*
    - III. *Œdematodes.*
    - IV. *Gangrænosum.*
- VI. ERYSIPELAS NASI.
- VII. FURUNCULUS.
- VIII. PARONYCHIA.
- IX. CARBUNCLE.

I. INFLAMMATION.

778. I have little to say upon inflammation in this place, having treated the subject fully already. I shall merely make a few *practical* remarks upon it.

779. I. *The History.* The usual *cause* of Inflammation is exposure, and especially *partial* exposure, to cold and damp. It is then generally *simple*, that is, confined to one texture or organ. It is frequently, however, a *complication* of other diseases or states of the constitution: it is

then apt to be more *diffused*, and it is more disposed to induce morbid changes, and less to undergo the processes of resolution and reparation. This fact is so important, that pleuritis, for example, may be regarded as a curable, or as a formidable disease, according as the previous health of the patient was good or impaired.

780. II. *The Modifications* of Inflammation. Besides the modification of inflammation induced by the condition of the general system, others are induced by the difference of textures of the part affected. We have, hence, the various forms of Inflammation seen in the—

I. *Serous,*
II. *Parenchymatous, and*
III. *Mucous, textures,*

already noticed.

781. III. *The Symptoms.* Inflammation of the *serous* membranes is chiefly seated in the

I. *The Pia Mater,*
II. *The Pleura,*
III. *The Peritonæum.*

It is distinguished, generally speaking, 1, by *acute pains;* 2, by the absence of the heat of surface, debility and tremor of the muscles, the aching pains, the affection of the head, the hurry of breathing, &c. observed in fevers; and, 3, by extreme tolerance of loss of blood.

782. Inflammation of the *Parenchyma* of organs is seated in the brain, the lungs, the liver, &c.

783. *The Symptoms* of this form of Inflammation are, in some respects, intermediate between those of serous and mucous inflammation; but they approximate far more to the former than the latter. There is less pain; and there is less tolerance of loss of blood.

784. Inflammation of the *Mucous* membranes is principally seated in—

I. *The Bronchia,*
II. *The Intestinal Canal,*
III. *The Urinary Organs,*
IV. *The Uterine Organs.*

It is characterized, 1, by less pain, and 2, by far less tolerance of loss of blood than inflammation of the *serous* membranes, or even of the *parenchyma* of organs.

785. IV. *The Morbid Anatomy* of Inflammation has been already fully given, § 27—.

786. V. The same remark applies to the *Treatment*;— § 168.

II. RHEUMATISM.

787. Rheumatism occurs in the Acute, Chronic, and Intermediate forms, and is external or internal in its seat.

I. *Acute Rheumatism.*

788. I. *The History.* The Acute Rheumatism usually arises from exposure to wet and cold, and affects the young, the athletic, and the male sex principally. Chronic Rheumatism is more frequent in females, the old, and the infirm; and it is a frequent *sequela* of the acute form of the disease.

789. II. *The Symptoms.* The Acute Rheumatism is denoted by a painful affection of several or most of the limbs and *large* joints, accompanied by tenderness, and a slight degree of tumor, and of redness. The joints, and of course the muscles, are principally, and successively, affected; the pain is comparatively slight during a state of rest, but rendered excruciating on muscular motion or effort.

790. Acute Rheumatism is further characterized by a great expression of pain, with excessive perspiration on the forehead, and a loaded and moist state of the tongue. The patient generally lies on his back, and especially avoids every motion of the body or limbs; or, if he does move, he experiences an acute aggravation of pain, calls out, and gives a prompt check to the muscular effort. There is little languor or debility, little disturbance of the mental faculties. The general surface is usually covered with perspiration, which is usually *acid;* the skin is warm, pale, and often profusely moist; frequently with miliaria, and a peculiar odour is exhaled. The pulse is frequent, strong, and full. The functions of the head are unaffected. The appetite is sometimes little impaired. The bowels regular. The urine is *acid* and deposits a sediment of the lithates, especially on the decline of the affection.

791. III. *The Complications or Metastases.* The subject of Internal Rheumatic Affections is one of the very deepest interest, and still demands a renewed and connected investigation.

792. Rheumatism of the Heart is that form of internal Rheumatism best known. It was first distinctly pointed out to the pupils of St. Bartholomew's by Dr. Pitcairn in 1788; afterwards it was particularly noticed by Dr. Baillie[1], by Dr. Odier of Geneva[2], Mr. David Dundas[3], and Dr. Wells[4]; and it has been recently noticed by Dr. Latham[5], Dr. Watson[6], and particularly by M. Bouillaud[7], &c. The last-named author lays an unjust claim to originality, in reference to Rheumatic Carditis; but he has distinguished, with great force, the external and internal forms of this disease under the apt designations of Pericarditis (περί, *around*, καρδια, *the heart*), and of Endocarditis (ἔνδον, *within*).

793. The head; the pleura, and the lungs; the liver, and some of the other abdominal viscera, have also been supposed to be affected by Rheumatism. But the extent and the limits, the history, the diagnosis, and the pathology, of Internal Rheumatism, are still to be ascertained. It may exist as a *complication* of external Rheumatism, or it may take its place by *metastasis*. It then affects,

1. *The Pia Mater and Brain.*
2. *The Pleura and Lungs.*
3. *The Pericardium and Heart.*
4. *The Pleura and Diaphragm.*
5. *The Peritonæum, the Liver*[8], *&c.*

794. It must be admitted to be remarkable that so many

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[1] See the Morbid Anatomy.

[2] Manuel de Médecine Pratique, 1803.

[3] The Med. Chir. Trans. vol. i, p. 31.

[4] Trans. of a Soc. for the Imp. of Med. and Surg. Know., vol. iii, p. 372.

[5] London Med. Gaz. vol. iii, for 1828-1829.

[6] Ibid. vol xvi, for 1833, p. 56.

[7] Traité Clinique des Maladies du Cœur; Paris, 1835; and Nouvelles Recherches sur le Rheumatism; Paris, 1836.

[8] My reader may compare the Trans. for Imp. vol. iii, p. 411; the Clinique of M. Andral, vol. i, p. 4; 472; vol. ii, p. 167; the Trans. of the Irish Col. of Phys. vol. iii, p. 291; the Dublin Hospital Reports, vol. ii, p. 321, &c.

who have written *expressly* upon Rheumatism, have failed to observe its tendency to induce organic affection of the heart.

795. Dr. Fordyce observes, " The disease seldom proves fatal." " Out of 87 cases, only two proved fatal. One was markedly a very sudden and unexpected transition to the brain. In the other, the disease seemed to be suddenly transferred to the vital organs, producing the most violent dyspnœa, and speedily proving fatal[1]."

796. Dr. Haygarth says, " Physicians have observed that the Acute Rheumatism is seldom, or never a fatal disease. This observation may be true, and is confirmed by my own experience, while it remains in its proper seat, the muscles and joints, and when not combined with other mortal maladies. But out of 170 cases, I have found 12 which had a fatal termination, either by a translation of the inflammation to the brain, lungs, kidneys, stomach, or some other vital part, or as being found in combination with other diseases." He deduces the following conclusions from his observations: " 1st, that seven fatal cases were combined with phrenitis; 2nd, that three cases terminated with a sudden and violent diarrhœa, two of them combined with phrenitis, and the third with convulsions; 3rd, that, in one case, when the pain and swelling receded from the joints the patient was attacked with shortness of breath, cough, and spitting of blood, which soon terminated fatally; 4th, that in three of the fatal cases the patients were so faint and languid that they were apprehensive of falling into a syncope; 5th, that in two cases miliary eruptions accompanied the Rheumatism; 6th, that in one there was a suppression of urine; and 7th, that one was combined with a typhus fever, and aphthæ on the tongue and throat[2]."

797. We cannot but read the following paragraph of Heberden with surprise:—" Rheumatismi acuti dolores rarissime relinquunt articulos, et in viscera transeunt."

798. III. *The Diagnosis.* These complications of Acute Rheumatism are distinguished by the same means as similar affections purely inflammatory. It is only necessary that the young physician should be warned of their frequency, and

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[1] Medical Reports on Rheumatism; 1795, p. 266.

[2] Clinical History of Diseases; 1805, p. 61.

especially of that of affections of the *heart*, in the course of the original disease. He is thus led to *watch* for them, to detect them *early*, and to treat them *promptly*, as well as energetically.

799. But, besides this list of Internal Rheumatisms, there is a series of rheumatic affections of the parietes of the cavities, which it is very essential to distinguish. These are,

1. *Of the Head; hemicrania; or cephalodyne.*
2. *Of the Thorax; or pleurodyne.*
3. *Of the Diaphragm.*
4. *Of the Parietes of the Abdomen.*
5. *Of the Loins; or Lumbago.*

800. IV. *The Morbid Anatomy* consists principally in thickening the articular fibrous textures,—the ligaments, cartilages, and periosteum; and of effusion into the joints and bursæ.

801. V. *The Treatment.* The first remedy in Acute Rheumatism is general blood-letting. This operation must be conducted on the principles already explained (§ 353, &c.). There is, as in inflammation of the serous membranes, great tolerance of loss of blood; but Rheumatism is less under the control of blood-letting than inflammation.

802. After general blood-letting, leeches appear to afford an important remedy.

803. The other remedies are calomel and opium, ipecacuanha and opium (Dover's powder); antimony; guaiacum; cinchona; vapour and warm baths, &c.

804. Calomel and opium, given so as to induce ptyalism, have great efficacy, after blood-letting has been sufficiently administered, in subduing this painful disease.

805. The colchicum is less specific in Rheumatism than in arthritis; but it is doubtless a very valuable remedy: the tincture, the wine, the acetous extract; the three former in doses from ten to twenty minims, the last, in that of from one to two grains, may be given three, four, or five times a day, so as to affect the system.

806. When the remedies already noticed have failed, the cinchona, and especially the sulphate of quinine, has been

found effectual. One, two, or three grains, with a few drops of dilute sulphuric acid, may be given three, four, or five times a day. Dr. Willan observes, "Some practitioners continue to let blood in most cases of Acute Rheumatism, thinking themselves justified in their mode of practice by the sizy appearance of the blood. The same principle might lead them to empty the whole sanguiferous system; for, every time blood-letting is repeated, the blood becomes more and more dense, or sizy. I have farther observed that, by bleeding repeatedly, the pains, swellings, and febrile symptoms, were not only aggravated at the time, but often protracted infinitely; at least, I have seen them continue, under such a mode of practice, upwards of two months. The ill success of it probably first induced other practitioners to adopt an opposite plan; when it was found that Peruvian bark, and vitriolated iron, or the precipitate of it combined with myrrh, as recommended by Dr. Griffiths, afforded both speedy and permanent relief[1]." Dr. Haygarth says, "the principal purpose of his publication is to recommend the Peruvian bark in preference to all other remedies[2]."

II. *Chronic Rheumatism.*

807. I. *The History.* This form of Rheumatism is frequently the *sequela* of the acute. It is frequently too the gradual effect of long-continued exposure to damp and cold: soldiers, miners, the weavers who in Manchester work below the surface of the soil, are frequently the subjects of this painful disease.

808. II. *The Symptoms.* In Chronic Rheumatism the pain is more fixed, and less general, and there is not even the slight tumor, or discolouration, or the tenderness, of the acute form of Rheumatism. But the limbs gradually lose their power, their sensibility, and sometimes their wonted bulk even, and the patient becomes extremely lame. Or these affections take place in a slight degree only.

809. III. *The Diagnosis.* Chronic Rheumatism must be distinguised from

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[1] Reports, p. 261.

[2] Op. cit. p. 18.

Periostitis,

whether this be syphilitic, mercurial, or the effect of exposure to damp or cold. Periostitis is apt to fix itself in the long or flat bones,—the cranium, the clavicle, the ribs, the ulna, the tibia, &c. It is usually distinguished by detecting a *spot* affected with tenderness and swelling. It prevents sleep. It is relieved and eventually cured, by mercury carried to ptyalism.

810. IV. *The Treatment.* Besides the remedies for Acute Rheumatism, detailed § 794, others have been recommended in its Chronic form, but chiefly guaiacum, the warm bath, blisters, liniments, &c.

811. The guaiacum has been given in Chronic Rheumatism in the form of powder, the ammoniated tincture, &c.

812. To these remedies Dr. Bardsley of Manchester has added the arsenic, and the Cod-liver and Ling-liver oil, in a work entitled Medical Reports, and published in 1807.

813. After leeches, blisters, and a liniment of spiritus terebinthinæ, fomentations, and the vapour bath, followed by shampooing, &c., and, lastly, cold-bathing, have been found of great utility in Chronic Rheumatism.

III. NODOSITY.

814. Nodosity of the joints was first distinguished from rheumatism and arthritis by Dr. Haygarth of Bath[1].

815. I. *The History.* This disease occurs principally in females somewhat advanced in years; but I have seen it in its most extensive form in a very young lady: it attacks the first joints of several fingers. I have also seen a similar affection in a youth, which affected the second joint of several fingers, and not the first, inducing considerable thickening. Dr. Haygarth observes, " These nodes are almost peculiar to women, and generally begin about the period when the menses naturally cease." He adds—

816. " Out of the number of cases above stated, there was only one man. His age is not noted, but he appeared to be between 50 and 60 years old. He ascribed the complaint

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[1] Op. cit p. 119.

to a fall that had violently strained his wrists and fingers, which were the only seat of the nodes in this case. But in the female constitution it is seldom confined to so few joints."

817. II. *The Symptoms.* This affection consists in hard, pale, and painful swellings, about the different articulations, especially those of the fingers, but also successively about any of the other joints. It increases gradually, and often induces much suffering and more deformity. The swellings are sometimes tender under pressure; they are confined to the immediate vicinity of the articulations, and do not appear to affect the muscles; the motions of the joints become much impeded, and sometimes a degree of dislocation occurs.

818. The following table of Dr. Haygarth presents a view of the parts most apt to be affected with Rheumatism and Nodosity respectively:—

Joints and Muscles affected with Acute Rheumatism.

JOINTS.	CASES.	MUSCLES.	CASES.
Knees	67	Head	22
Shoulders	43	Chest	21
Ankles	42	Thighs	20
Hands	38	Legs	20
Feet	36	Arms	12
Wrists	33	Side	7
Hips	30	Belly	3
Back	25	Hypochondre	3
Neck	15	Stomach	2
Loins	13	Face	2
Elbows	10	Eye	2
Fingers	9	Throat	1
Heel	4	Gums	2
Toes	2	Groin	1
Ham	2		
Joints	19		118
	388	Limbs	8
		Wandering	4
		General	2
			14

Joints affected with Nodes.

JOINTS.		PATIENTS.
Fingers	13	29
Hands	7	
Wrists	9	
Knees		10
Feet		6
Ankles		6
Shoulders		4
Neck		3
Elbows		3
Hips		3
Heel		1
Leg		1
Joints		8
		74

819. III. *The Diagnosis.* Dr. Haygarth observes—"The nodes appear most nearly to resemble Gout. Both of them are attended with pain and nodosity of the joints: but they differ essentially in many distinguishable circumstances. 1. In gout, the skin and other integuments are generally inflamed, with pain which is often acute, soreness to the touch, redness and swelling of the soft parts, but

in no respects like the hardness of bone. 2. The gout attacks the patient in paroxysms of a few days, weeks, or months, and has complete intermissions, at first for years, but afterwards for shorter periods. 3. The gout attacks men much more frequently than women.

820. " These nodes are clearly distinguishable from acute rheumatism, because they are not attended with fever. The tumor of the joints is much harder, more durable, and less painful, in the former than in the latter disease. The nodes are totally different from chronic rheumatism, because the latter chiefly affects the muscles, and is seldom attended with any swelling of the affected parts." p. 159-160.

821. IV. *The Treatment.* One lady kept the fingers black with the nitrate of silver, with great benefit. Otherwise I am not aware of any remedy for this deformity. Dr. Haygarth says, " For this complaint I have ordered guaiacum in 10 cases; cinchona in 9; leeches in 9; warm-bathing and pumping at Bath in 9, at Buxton in 2; vapour-bath in 2; sea-bath in 1; antimony in 5; mezereum, aconite, and, externally, oleum jecoris aselli cum camphorâ, and bootikins, in one case each;" and he adds, " As far as my experience extends, most benefit was derived from the warm-bath, and a stream of warm water, with repeated application of leeches, on the diseased joints."

IV. ARTHRITIS.

822. Arthritis, like rheumatism, occurs in an Acute and Chronic form, and is seated externally or internally.

823. I. *The History.* Arthritis seldom occurs during early youth[1]. It is decidedly hereditary. It generally recurs in the person who has been once affected; sometimes at nearly stated periods; occasionally from accidental causes. It affects the same, or different, and even successive parts, on these occasions; the pain is then less severe, but the subsequent debility longer continued. Arthritis affects the male

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[1] Hippocrates says—Παῖς οὐ ποδαγριᾶ, πρὸ του ἀφροδισιασμοῦ; Sect. vi, Aph. 30; and Celsus—Ea—raro castratos vel pueros ante fœminæ coitum tentant. Lib. iv, cap. 24; and every scholar is acquainted with that epigram:—

Λυσιμελοῦς Βάκχου, καὶ λυσιμελοῦς Αφροδίτης
Γεννᾶται θυγάτηρ, λυσιμελὴς Ποδάγρα.—ΗΔΥΛΟΣ.

sex, and the intemperate principally, but by no means exclusively. It is generally dependent on a deranged state of the system, and especially of the stomach and bowels; and it very frequently attends the acute or protracted dyspepsia.

I. *Acute Arthritis.*

824. II. *The Symptoms.* The Acute Arthritis, especially on its first accession, generally affects one particular joint alone,—most frequently the ball of the great toe, but occasionally the ankle, the knee, the hand, or the elbow. The attack frequently begins without apparent cause; it is most apt to take place during the night or early in the morning; it induces extreme pain, tenderness, throbbing, or sense of weight, even whilst the limb remains unmoved; it is attended with tumor, a vivid redness, and an appearance of distention of the skin; and afterwards with a more diffused and œdematous tumidity. The attack is often preceded by some symptoms of disorder of the digestive organs, or of the general health; and it is sometimes attended with feverishness, heat of the skin, inappetency, a loaded tongue, thirst, constipation, and a loaded state of the urine, from which a copious sediment of lithic acid, or the lithates, is deposited. The violence of the pain frequently remits during the morning, and returns in the evening.

825. III. *The Complications or Metastases.* Internal Arthritis is far more obscure than internal rheumatism even. It assumes the following forms principally:

1. *Vertigo; tinnitus aurium.*
2. *Palpitation; faintishness.*
3. *Nausea; pain at the Stomach, or in the Bowels.*
4. *Calculus, or gravel, of lithic acid or the lithates.*

826. In one case described by M. Cruveilhier, the patient experienced several attacks of apoplexy. Mr. Kiernan found a calculus in the brain in a case of Arthritis. M. Bayle describes the expectoration of calculi as apt to occur in arthritic patients. Otherwise, I believe that *no internal arthritic changes of structure* have been discovered. The complications are *functional.* This, if true, forms an important distinction between Arthritis and Rheumatism.

827. Another distinction consists in the greater tole-

rance of loss of blood in internal Rheumatism, than in internal Arthritis. In illustration of this point I must quote an interesting case of Dr. Haygarth:—the case was supposed to be carditis arthritica on July 3rd, and enteritis arthritica on the 22nd. On the former occasion seven ounces of blood were taken with the effect of producing "sickness, prostration of strength, depression of spirits, cold extremities, and faintness approaching to syncope." On the latter, the patient bore the loss of blood better[1].

828. IV. *The Morbid Anatomy* of Arthritis consists in tophaceous (τόφος, *a crumbling gravel stone*) deposits in the joints affected; they consist, according to Dr. Wollaston, of the *urate of soda*; according to M. Barruel, of *urate of soda and phosphate of lime*[2]. It is impossible not to see the relation which these deposits bear with those of the *urine*.

829. V. *The Diagnosis* of Rheumatism and Arthritis is both interesting and important; and I shall, therefore, state it fully here:

RHEUMATISM	ARTHRITIS
1.—occurs in the young, even the very young, and the robust.	1.—occurs in the middle-aged, the old, the dyspeptic, &c.
2.—is induced by *external* causes, principally by exposure to damp and cold.	2.—is induced by *internal* or constitutional causes, and especially by profusion in diet and wine.
3.—affects many of the larger joints, and the muscles.	3.—usually affects one of the smaller joints only, especially the ball of the great toe.
4.—induces intense redness, tenderness, and torture, even without motion.	4.—induces but slight redness or tenderness, and pain principally or only felt on moving.
5.—*may* suppurate.	5.—rarely or never suppurates, but forms deposits of urate of soda and phosphate of lime.
6.—is attended by profuse *acid perspiration*.	6.—is attended by *urinary* deposits of the *lithic acid* or the *lithates*.
7.—is particularly liable to induce *organic* disease of the *heart*.	7.—is apt to induce *functional* disturbance, of the *head*, of the *stomach*, &c.
8.—is attended by great *tolerance* of *loss of blood*.	8.—is attended by *impatience* of *loss* of *blood*.
9.—is very apt to return.	9.—is less liable to return.
10.—is hereditary.	10 —is not hereditary.

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[1] Trans. of the Col. of Phys. vol. iv, p. 303.

[2] Cruveilhier, Anat. Path. Fasc. iv, p. 5.

830. In a word, Rheumatism is an affection of *tissues*, and though peculiar, yet *inflammatory ;* Arthritis is an affection of *functions*, and more allied to *irritation* than inflammation. In fatal cases, organic changes destroy in the former; failure of the vital powers or functions in the latter.

831. It is interesting to remark, that the modes of treatment of former times agree with this last remark: blood-letting was the treatment of Rheumatism, cordials of internal Arthritis[1]. There is also a total absence of records of any internal organic change in Arthritis, with the exception of calculus.

832. VI. *The Treatment* of Arthritis consists, in the first instance, in a strict attention to the stomach, bowels, and kidneys.

833. The most rigid *diet* should be enjoined, consisting of the mildest animal food, and especially mutton, stale bread, the plainest kinds of pudding ; tea, coffee, cocoa, &c., avoiding stimuli and sauces, and condiments of every kind.

834. The *secretions* should be corrected, and then, with the bowels, regulated with the utmost attention: mild mercurials may be proper with the first object, and aloës with the second ; one or two grains of the hydrargyri submurias, or three, four, or five of the pilula hydrargyri, with five or ten grains of the pilula aloës et myrrhæ, may be given every night ; and a draught, consisting of twelve drams of infusion of rhubarb, one of the tincture, one of manna, with one dram of the sulphate, and one scruple of the carbonate, of magnesia, may be given each morning.

835. For the acid urinary diathesis, and deposits of lithic acid and the lithates, a scruple of the carbonate of potass may be given in soda-water twice or thrice a day. In France, Arthritis is frequently treated with success by the eaux de Vichy.

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[1] Plerique autores olim consenserunt remedia arthritidis esse prorsus contraria iis quæ prosunt adversus rheumatismum. Etenim contendunt calidissima quæque illi convenire; ab hoc omnigena refrigerantia postulari. Sydenhamus sanguinem mittere prohibet in arthritide; quem idem in rheumatismo quater, aut sæpius, copiose detrahendum præcepit. Attamen in iis quæ postea scripsit, videtur aliquid remittere voluisse de tantis sanguinis missionibus, quas in uno ægroto non bene cessisse compererat."—*Heberdeni Commentarii*, cap. ix, p. 54.

[1] Sub finem Epist. Respons. primæ.

836. Such a plan may be pursued to perfect recovery. But, should the patient become impatient, the colchicum must be administered: of the tincture, or the wine, twenty drops may be given twice, or thrice, or four, or six times a day, according to the urgency of the case; or the acetous extract may be given in the dose of a grain, once, twice, or thrice a day. Three Baronets—Sir Joseph Banks, Sir Gilbert Blane, and Sir Henry Halford[1]—have borne their testimony to the identity of the *Hermadactyl* recommended against Arthritis by Alexander Trallianus, of the ingredient to which the *Eau Medicinale de Husson* owes its anti-arthritic virtues, and of the modern *Colchicum;* and to the extreme value of this remedy.

837. In severe suffering, the acetate or muriate of morphia may be given, in the dose of one-third, one-half, or a whole grain.

838. Leeches, a fomentation, a tepid lotion, may be applied locally.

II. *Chronic Arthritis.*

839. Chronic Arthritis consists in a permanent pain, tumor, weakness, deformity, distortion, ankylosis, of the parts which have been repeatedly the seat of Acute Arthritis, and especially of the hands and feet.

840. Eventually tophaceous deposits take place. More remotely still, these deposits induce a partial suppuration, ulceration, and fistulous openings, and at length escape, or are removed.

841. The mind suffers; for "every paroxysm may be as justly denominated a fit of *anger*, as a fit of the gout[2]."

842. The sufferings attendant on calculus are frequently superadded; "the patient is sometimes at a loss to know whether the *stone* or the *gout* be most severe[3]."

843. "But," says the illustrious Sydenham, "what is a consolation to me, and may be so to other *gouty* per-

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[1] See the "Medical Logic," ed. 2, p. 251, and "Select Dissertations," p. 55, of Sir Gilbert Blane; and the "Essays and Orations," 1831, of Sir H. Halford, p. 10. To these names may be added that of Sir E. Home.

[2] Sydenham, op, cit. p. 425.

[3] Ibid.

sons of small fortunes and slender abilities, is, that kings, princes, generals, admirals, philosophers, and several other great men, have thus lived and died. In short, it may, in a more especial manner, be affirmed of this disease, that it destroys more rich than poor persons, and more wise men than fools[1]."

844. The treatment of Chronic Arthritis is similar to that of the Acute, only longer continued, in a milder form, and conjoined with milder tonics, especially the quinine, iron, bitters, &c. and gentle frictions applied to the affected limbs.

V. ERYSIPELAS.

845. Erysipelas occurs under four different forms:

1. *The Phlegmonode.*
2. *The Erratic.*
3. *The Œdematous.*
4. *The Gangrenous.*

846. I. *The History.* Erysipelas is generally preceded by marked derangement of the digestive organs. It is frequently the immediate effect of indigestible food. It frequently prevails epidemically, especially in hot seasons, and then assumes its worst, or even the gangrenous form. It was supposed by Dr. Wells to be sometimes contagious[2].

I. *Erysipelas phlegmonodes.*

847. II. *The Symptoms.* This form of Erysipelas frequently affects one side of the head and face; at other times it appears upon one of the limbs. In the former case there are languor, drowsiness, and dull aching pains in the head, neck, and back; the tongue is white, the breath tainted, and the bowels disordered. The swelling usually begins on the *second* or *third* day, on the side of the nose, on the cheek, or near the ear; and extends subsequently to the scalp, neck, or breast: it is of a dark red, smooth, and soft, and attended with heat and tingling. The face becomes disfigured, and

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[1] Sydenham, op. cit. p. 425, 426.

[2] Trans. of a Soc. for Imp. of Med. and Surg. Know. vol. ii, p. 213.

there is frequently delirium or stupor. On the *fourth* or *fifth* day vesications take place, principally about the central part of the swelling, of unequal size, and irregular base, and containing a fluid at first clear and watery, afterwards straw-coloured and opaque, or livid. These vesicles break about the *fifth* or *sixth* day, when the swelling begins to subside and assumes a yellowish hue.

848. Similar appearances take place when the disease affects a limb.

849. The *erratic* form of Erysipelas is only peculiar by its milder and wandering character.

II. *Erysipelas œdematodes.*

850. This form of Erysipelas is marked by less redness and greater tumefaction than the former. There is also greater tendency to delirium and coma, and to gangrene. It is frequently fatal, with these symptoms, about the eighth day.

III. *Erysipelas gangrænosum.*

851. This form of the disease begins sometimes as the phlegmonous; sometimes as the œdematous. The swelling exhibits a dark red hue, inclining to lividity; it is soft and puffy; phlyctænæ form upon it, containing a dark-brown or livid fluid, whilst the skin at their bases becomes black and gangrenous. On the cheeks and other parts, there are deep ulcerations, with livid edges; a thin purulent fluid is often diffused through the cellular membrane, and sinuses, caverns, and sloughs are formed; the eye-lid frequently becomes hard and brown, or blackish, and sphacelates. Delirium and coma accompany these appearances. It affects various parts of the body.

852. III. *The Complications.* Dr. Heberden justly remarks—" In hâc, ut in omni aliâ febre, oportet vigilare, et quicquid mali oriatur, idoneis remediis succurrere[1]." Indeed, in some cases of fatal Erysipelas, it is probable that there is either

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[1] Commentarii, p. 148.

Inflammation, *or Congestion*, *within the*—

1. *Head*,
2. *Thorax*, *or*
3. *Abdomen*.

853. IV. *The Morbid Anatomy*. I need scarcely repeat what I have already stated several times, that the morbid anatomy requires to be investigated anew in reference to each of the eruptive fevers; this remark applies to Erysipelas, equally with scarlatina, variola, &c.

854. It is by no means certain that all the *Complications* of Erysipelas are either inflammatory or congestive: Dr. Wells observes, "It seems probable that the delirium and coma in Erysipelas do in no case depend upon inflammation of the brain, or its membranes; for it is certain, that they may exist in Erysipelas of the face without any such cause, since Dr. Baillie found, upon opening the body of a person who died of that disease in January 1796, and who had been affected with delirium and coma, that the contents of the head were altogether free from any morbid appearance." Dr. Wells adds, "I once assisted at the examination of the body of a stout young soldier, who had died comatose, while labouring under a scarlet-fever, unattended with any considerable affection of the throat, in whose brain no mark of inflammation or extraordinary fulness of the blood-vessels was discovered.[1]" These remarks agree with those of M. Louis in reference to cerebral symptoms in typhus fever[2].

855. To these observations I may add that some *local* affections must be particularly noticed as further *complications* of Erysipelas. These are, in the *phlegmonode* Erysipelas,

I. *Bullæ*.
II. *Diffused Suppuration*.
III. *Sloughing of the Cellular Membrane*.

And in the *gangrenous*,

I. *Bullæ*.
II. *Ichor; Sanies; Pus*.
III. *Slough; Gangrene*.

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[1] Trans. of the Soc. for the Imp. of Med. and Surg. Know. vol. ii, p. 224, 225.

[2] Op. cit. t. i, p. 395, &c.

856. V. *The Treatment.* The first remedy proposed in Erysipelas is blood-letting. This may be highly proper in the phlegmonode form of this disease; in the three others it is manifestly improper. It must, for the sake of safety, be administered in the way which has been described, and its measure and repetition must be regulated by its effects.

857. An emetic, a dose of the hydrargyri submurias, and a draught of senna, should be administered immediately; and the second and third of these remedies must be repeated daily, or each second day.

858. Leeches and blisters have been applied over the parts affected. But punctures or incisions made with the lancet, recommended by Dr. Dobson[1], similar incisions carried to the extent of about an inch, as proposed by Mr. Hutchinson[2], or the still larger incisions recommended by Mr. Lawrence[3], are far more efficacious.

859. To these remedies must be added the nitrate of silver, as recommended by Mr. Higginbottom to be applied over, and beyond, the part affected.

860. For all the forms of Erysipelas, except the phlegmonode, the cinchona appears to be highly valuable. I must refer, on this point, to the volumes enumerated in the note subjoined[4].

VI. ERYSIPELAS NASI.
VII. FURUNCULUS.
VIII. PARONYCHIA.
IX. CARBUNCLE.

861. There are several local diseases of constitutional origin to which I must beg to draw my reader's attention, in connection with Erysipelas, in this place.

862. The *first* of these is Erysipelas itself, assuming a peculiar character, and seated in the *nose.* This part of the face is apt to be affected, in some patients, with *attacks* of

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[1] Med. Chir. Trans. vol. xiv, p. 206.

[2] Ibid. vol. v, p. 278; vol. xlv, p. 213; see also p. 207.

[3] Ibid. vol. xiv, p. 1.

[4] Trans. of a Soc. for Imp. of Med. and Surg. Know. vol. i, p. 290; vol. ii, p. 224; vol. iii, p. 371.

Erysipelas repeated every month or two, or at other intervals. It is accompanied with a distressing sense of heat and stiffness. It is effectually cured and its recurrence prevented by a persevering use of mild stomachic aperients, such as rhubarb and aloës.

863. Another affection nearly allied to this, is Furunculus, or common boil. It is rarely solitary. Depending on a deranged state of the general system, furuncle usually occurs in considerable numbers, simultaneously or consecutively. It need scarcely be described: it consists in an indurated phlegmon, from half an inch to an inch and a half in diameter, and of intense redness, attended by extreme pain, tenderness, and throbbing. It suppurates partially. In its centre, a portion of the cellular membrane usually sloughs, constituting what is termed the *core*. It is relieved and cured at once by an incision by means of a lancet, and its recurrence is prevented by a course of mild stomachic aperients, preceded by a dose of ipecacuanha, of the hydrargyri submurias, and of senna and salts.

864. Precisely the same remarks, as to its origin and cure, apply to paronychia or whitlow, which is a similar phlegmon, having its seat at the root of the finger-nail. It suppurates partially. The nail sloughs at its root, and sometimes the bone itself is affected with necrosis.

865. Carbuncle is a phlegmon of a still more serious character, arising out of constitutional causes of a still more serious kind. It frequently occurs on the nucha, in persons far advanced in years. It sloughs externally, and the patient frequently sinks with *typhoid* symptoms. A prompt and free crucial incision is the important remedy, whilst the strength of the patient is supported by wine, the carbonate of ammonia, the quinine, &c.

866. In the predisposed, carbuncle is frequently spontaneous; but it is also frequently excited by slight circumstances, such as the application of a blister, or the subsequent application of a poultice. It soon assumes a deep, livid, red hue, especially in its central part. It often spreads to a diameter of five inches or more.

CHAPTER IV.

ON DYSPEPSIA, CHLOROSIS, ETC.

867. THE class of diseases of which I now proceed to treat, consists of a more general morbid affection, usually combined with some topical symptom or symptoms. The general affection is complex and various; the complications are multiform and changeable, and, by their incidental predominance, frequently imitate other diseases widely different in their nature.

868. The complications of these morbid affections are apt to be mistaken and mistreated for different inflammatory and other local diseases, and appear to me to constitute a class of morbid affections scarcely less frequent or less important, and requiring to be distinguished with the utmost care.

869. I propose to collect and embody the system of facts which belong to this part of pathology,—to present accurate descriptions of the different forms, and to trace the diagnosis of the numerous complications of these disorders.

870. The first part of the chain of constitutional causes and effects in these disorders is a loaded state of the large intestine. From this loaded state of the bowels, their functions, and those of all the chylopoetic viscera, most probably become deranged. The alvine contents become disordered merely by delay; and their presence induces, in its turn, a disordered state of the functions,—or actions,—of all the organs contributory to digestion, and at length of other organs more remotely situated in the animal frame.

871. The functions of the parts within the mouth become obviously disordered. The secretions become morbid; the tongue becomes loaded and swollen; the gums red and

tumid; the breath tainted; and the saliva sometimes profuse and offensive. The complexion and the skin become morbid, and there are the appearances observed in the acute dyspepsia or in chlorosis, and frequently œdema. This condition of the complexion and skin varies with the state of the original disorder, and with that of the tongue and internal mouth, of which it affords indeed an index. With the state of the mouth and skin, that of the secretions and other functions of the whole course of the alimentary canal and the contributory digestive organs,—the liver, the pancreas, &c. may be presumed to be all morbidly affected. Digestion is variously deranged; the contents of the bowels become melænic, or clay-coloured, or otherwise unnatural.

872. As co-existent or subsequent links of this chain of sympathies, the functions of the brain, heart, respiration, stomach, intestines, uterus, bladder, &c. become variously affected. The muscular system and the senses also suffer in different instances. And nutrition, absorption, or secretion, is impeded and impaired.

873. The disorders comprised in this class may be arranged in the following order:

I. DYSPEPSIA.
  1. *The Acute,*
  2. *The Protracted,*
  3. *The Cachectic,*
  4. *The Chronic, Forms.*

II. CHLOROSIS.
  1. *Incipient,*
  2. *Confirmed,*
  3. *Inveterate.*

III. HYSTERIA.
  1. *Mild,*
  2. *Severe,*
  3. *Inveterate.*

I. DYSPEPSIA.

874. This disorder occurs under four forms: the *acute*, the *protracted*, the *cachectic*, and the *chronic*.

I. *The Acute Form.*

875. I. *The History.* This affection is the usual result of sedentary habits. It affects literary persons, and is particularly apt to be induced during a residence at college; it is also frequently seen in females and persons of a delicate mode of life; it affects tailors and mantua-makers, and the youthful inhabitants of schools[1]. It comes on insidiously, but often first attracts attention by the suddenness and severity of some of its complications.

876. II. *The Symptoms.* The Acute Dyspepsia is early and principally characterized and distinguished by the concurrence of the following symptoms,—namely, weakness, tremor, headache, vertigo, fluttering, faintishness, tendency to perspiration, susceptibility to hurry and agitation, weariness, and loss of flesh.

877. The countenance is rather pale and thin; the lips are pale, and, with the chin, frequently tremulous, especially on speaking; the surface of the face is generally affected with an appearance of oily, clammy, and swarthy perspiration, especially near the nose.

878. The tongue is almost invariably loaded:—sometimes only slightly, whilst its edges are clean and red;—in severe cases, a load has formed over the tongue, and has, almost at once, peeled off, leaving the surface morbidly red, smooth, and tender;—at other times it is more loaded, swollen, and œdematous, formed into deep sulci or plaits, and marked by pressure against the contiguous teeth,—the inside of the cheeks being also impressed in the same manner; the papillæ of the tongue are numerous and enlarged; the gums are red and swollen, and occasionally bleed; the

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[1] I have, in two localities, witnessed the most marked form of the Acute Dyspepsia within the precincts of convents. The seclusion and inactivity of these establishments appear to be the causes which slowly induce this disease.

teeth and the mouth are in general foul, and the breath fœtid; in a fourth instance, the tongue may, however, be clean, but lobulated, whilst the internal mouth and breath are little affected.

879. There is a tendency to perspiration, on slight exertion, or any surprise, and, sometimes, in the night, or early in the morning; the skin is, in general, cool, rather moist, and clammy; in some protracted cases, it has become dry and harsh.

880. The hands and feet are apt to become very cold, and the nails occasionally assume a lilac hue.

881. The patient is often affected with great tremor, observed sometimes in a quivering of the lip, or dimpling of the chin, but more usually on holding out the hand, or in carrying a cup of tea, for instance, to the mouth, on attempting to stand erect or walk, or on being fatigued or hurried.

882. There is an early and daily loss of flesh.

883. The patient experiences headache and vertigo, and he is nervous, and easily hurried and agitated. There is sometimes heaviness for sleep; sometimes great wakefulness and restlessness; sometimes incubus, rarely delirium; sometimes loss of memory and absence of mind. There is almost universally a peculiar sense of fluttering about the heart and pit of the stomach. And there is frequently an acute pain in some part of the course of the colon.

884. The bowels are at first constipated; afterwards constipation and diarrhœa alternate, and sometimes the latter symptom becomes nearly permanent: the motions, during the constipation, are small; during the diarrhœa, scanty, extremely fœtid, dark-coloured, often accompanied by blood, and frequently attended by tenesmus.

885. III. *The Complications.* Besides the symptoms just enumerated, there are others which prevail more or less in almost every case; but they are, on the whole, less constant and more diversified; and, of these, one sometimes predominates so much over the rest, as to engross the attention of the patient, and sometimes of the practitioner, too exclusively. The secondary affection is then considered as idiopathic, and the symptom is apt to be treated as the dis-

ease. It is therefore of the utmost importance to present my reader with the following distinct enumeration of these symptoms:—

1. *Headache; Vertigo; Stupor; &c.*
2. *One Form of Epilepsy.*
3. *Paroxysms of Oppressive Dyspnœa; True Asthma.*
4. *Palpitation of the Heart; Fluttering; Faintishness; Irregularity and Frequency of the Pulse; One Form of Angina Pectoris.*
5. *Frequent and Violent Hiccough; Vomiting.*
6. *Some Convulsive and Spasmodic Affections.*
7. *Pain in the Epigastric, or One or Both of the Hypochondriac, or Chondiliac Regions.*
8. *Constipation; Diarrhœa; Tenesmus.*
9. *Hæmatemesis; Melæna.*
10. *Icterus.*
11. *Severe Pains of some of the Limbs.*
12. *Sudden Tumefaction of the Integuments, especially of the Face.*

886. Even where one of these symptoms is particularly marked and severe, however, several concur, and are experienced in a mitigated form, affording a characteristic feature of this disorder and a principal source of discrimination; for whilst most local diseases are denoted by being simple, and definite, this affection is distinguished by its multiplicity, and by apparently conjoining many or all disorders in one,—Ουχ 'ΕΝ τι των κακων φαινεται, αλλ' εϛιν ὅτε ΠΟΛΛΑ, η και ΠΑΝΤΑ.

887. This form of Dyspepsia is also characterized, although less so perhaps than the more chronic and continued forms of this affection, by being variable,—better and worse, —with this or that prevailing feeling or symptom,—even during a general recovery;—changes chiefly induced by bodily fatigue, mental agitation, errors in diet, or constipation.

888. IV. *The Treatment.* It is proper, in the first instance, to evacuate the bowels freely; but afterwards our object should be to induce a full and consistent evacuation

daily, at once avoiding, as much as possible, the teasing and irritating operation of medicine.

889. The decoction of aloës, the infusion of rhubarb and of senna, the vinum aloës, the Rochelle and Epsom salts, and manna, and aloës and rhubarb, variously formed into pills, are the remedies which I have thought most suited to effect the object which I have described.

890. In cases in which all medicines have proved irritating, a draught with five drops of tinctura opii, and twenty of sal volatile, has done great good; and, in conjunction with the aperient, I have frequently prescribed a draught with two or three drams of tincture of calumba or bark, to be taken twice in the day, with the intention of preventing irritation and exhaustion.

891. Gentle mercurials are useful. But I have known many patients who could not bear them even in their mildest forms. They must still, however, be deemed useful, when the alvine evacuation does not resume its proper colour by means of more ordinary aperients.

892. The cure is to be promoted by attention to diet, which should be of the most mild, light, but nutritious kind, and should be taken in very moderate quantities. The stomach is, in many cases of this disease, easily oppressed by the smallest portion of improper food, or by an undue quantity even of the lightest. In general, solid food, well masticated, and, of course, eaten slowly, agrees best, and especially mild animal food, as chicken or mutton; next to these, good stale bread not toasted, and mealy potatoes for vegetables, are proper; tea and coffee agree, except in individual cases; and hot water, with sugar, and the slightest quantity of brandy, or port, is, according to my experience, the best kind of beverage at dinner. In cases in which the stomach is irritable, a much stricter and milder kind of diet is required. Arrow-root or sago perfectly done in water, without any addition but sugar at first, afterwards with milk, cream, and spice, according to the effects produced, is the article of food best suited to such cases. In many instances of this morbid state, asses' milk promises to be of great service.

893. When the head is affected, cupping at the back of the neck, properly moderated, is the most important remedy.

894. The affection of the heart is relieved by the tinctura hyoscyami, the spiritus ammoniæ aromaticus, and by every soothing plan that can be devised.

895. In all those cases attended by hæmorrhage, I have been accustomed to prescribe the pilula hydrargyri. I am not sure that the more usual purgatives would be equally efficacious and beneficial.

896. In the case of icterus, the administration of an emetic, consisting of half a dram of ipecacuanha, and of an active purgative, has usually been attended by early relief.

897. In the cases of diarrhœa, the general treatment already described, is always effectual; the object is to procure consistent and ample evacuations daily. It is highly advantageous, in this case particularly, to follow the action of the mild, cordial aperient, with a few drops of the tinctura opii and the spiritus ammoniæ aromaticus, as already mentioned.

898. In the state of loaded bowel, which is frequently attended by pain, and even by tumor, in the course of the colon, the warm-water injection, administered by Mr. Reid's admirable syringe, is of great advantage.

II. *The Protracted Form.*

899. I. *The Symptoms.* In the more protracted form of this affection, the debility, tremor, loss of flesh, and tendency to faintishness and perspiration, are less observed, although perhaps not altogether absent. The countenance is rather sallow, and its surface is more or less affected as in the severer form described above. The tongue and the internal mouth are often affected in the severer degree described. The patient is incapable of pursuing any laborious employment. He is prone to perspire from slight exertion or agitation. He perhaps experiences loss of flesh. He is low-spirited and listless. The appetite is sometimes impaired, but sometimes craving. And he suffers from the symptoms

described, and from the complications enumerated, only in a milder and more protracted form than the subject of the severer cases of Acute Dyspepsia.

900. II. *The Complications.* Besides the symptoms enumerated, the less severe but more continued form of this disease is sometimes attended with one of the following affections:—

1. *Furunculi; Paronychia; Hordeola.*
2. *Erysipelas of the Nose; Erythema Nodosum; Urticaria Chronica; Lichen.*
3. *Purpura; Hæmorrhages.*
4. *Ulcerations and Pustules of the Conjunctiva.*
5. *Decay of the Teeth; a Morbid State of the Gums; a peculiar Ulcer of the Tongue; Chronic Sore Throat.*

901. III. *The Treatment.* In addition to the plan of treatment proposed for the Acute form of this affection § 888, there are questions, in the present case, respecting several other remedies: as the sarsaparilla, the sulphate of quinine, and the sulphate of iron. The two first, I am of opinion, may be safely given, and will be found of considerable advantage. The sulphate of iron requires rather more precaution in its administration; but it is, I believe, a more efficacious remedy, when suitably given, than either of the former. In order that the sulphate of iron may be prescribed with advantage, the bowels must have been first freely evacuated, and then properly regulated for some time; the tongue must be clean, and the prolabium and countenance in general pale.

902. The sarsaparilla, sulphate of quinine, and sulphate of iron, may also be advantageously given together.

903. The system of diet, of alternate exercise and repose, of free and full exposure to fresh air, and especially to the sea-breezes, and of sponging the surface, is essential in this, as in the more acute form of disorder of the general health; the same precautions must be observed in avoiding the causes; and all this must be done with great diligence, and with greater perseverance.

III. *The Cachectical Form.*

904. This morbid affection has appeared to degenerate in some cases into a state of *Cachexia*, and has been complicated not only with the diseases enumerated, but with other morbid affections,—especially of the skin, the mouth and throat, the periosteum, the absorbent glands, &c.

905. In one case there were conjoined, or in succession, —1, swarthiness of complexion; 2, feverishness, with parched throat and mouth, and heat of the forehead and legs; 3, tendency to perspiration; 4, quivering of the chin and lips in speaking, similar to that observed before shedding tears; 5, tremor; 6, fluttering; 7, loss of flesh; 8, discharge of bloody mucus from the nostrils, with ulceration; 9, ulceration of the throat; 10, icterus; 11, discharge of much blood and mucus from the bowels, preceded and attended by pain of the abdomen, with tenesmus and forcing; 12, the stools, otherwise, light-coloured; 13, some anasarca; 14, boils; 15, painful ulcers on the legs.

IV. *The Chronic Form.*

906. I. *The History.* This form of Dyspepsia, the common Dyspepsia of authors, is intimately allied to the less severe and more continued forms described, from which it may originate, or into which it may pass. But it very frequently begins and pursues a longer or shorter course, with the character about to be given.

907. II. *The Symptoms.* It is denoted, in general, by fits of despondency and gloom, of invincible disinclination for exertion, of pain about the head, sinking at the præcordia, and heat or fulness of the stomach. The countenance is liable to be rather sallow, and occasionally rather pallid; and there is often a great expression of despondency and lowness. The tongue is whitish and clammy, furred, and often affected with minute white points. There are, at different times, and in different instances, heartburn, a sense of heat or burning, acidity, load, distention, inflation, nausea; sometimes eructation of an acid, at other times of a nidorous taste, and sometimes the rejection of fluid, or of food. The bowels are often constipated, or there are unsatisfactory evacuations, and

the patient feels a sense of load about the rectum; sometimes there is considerable pain in the bowels. The appetite is in some cases moderate, in others much impaired, and, with the digestion, various in different periods and in different instances. There are many uneasy feelings in different parts of the body, which vary exceedingly, but always engross the patient's attention in a forcible manner.

II. CHLOROSIS.

908. I. *The History.* Chlorosis occurs principally in female youth; but frequently in married women, both young and old; and occasionally in the young and sedentary of the male sex, and even in men of adult age, from the influence of sedentary habits and mental anxiety. The most frequent cause is sedentariness. This affection is, therefore, usually observed in schools, in females of a delicate mode of life, or of a sedentary occupation or habit. Parturition; too long lactation; frequent hæmorrhagies; protracted or long-continued habits of menorrhagia,—and of leucorrhœa; anxiety; fatigue; and loss of rest, have appeared to induce the Chlorosis of persons more advanced in years.

909. Chlorosis occurs under three forms—the Incipient, the Confirmed, and the Inveterate.

I. *The Incipient Form.*

910. *The Symptoms.* The incipient form of Chlorosis is denoted by paleness of the complexion, an exanguineous state of the prolabia, and a slight appearance of tumidity of the countenance, and puffiness of the eyelids, especially the upper one. There is sometimes a tinge of green, or yellow, or of lead-colour, and frequently darkness of the eyelids.

911. There are great paleness of the general surface, hands, fingers, and nails; an opaque, white, tumid, and flabby state of the skin; and a tendency to œdema of the calves and ankles. And there is a certain loss of flesh.

912. The tongue is white and loaded; it is swollen, marked by pressure against the teeth, or variously formed into creases or folds; its papillæ are very numerous and

much enlarged. The gums and the inside of the cheeks become tumid, and the latter as well as the former are sometimes impressed by the teeth. The breath is tainted.

913. The patient is generally languid, listless, sedentary, indisposed for exertion, easily overcome by exercise, nervous, and low-spirited, drowsy, dizzy, faintish, or breathless. There is generally severe headache or vertigo; the memory and power of attention are apt to be impaired; and there is sometimes heaviness for sleep.

914. There is, in different instances, pain of one or both sides about the false ribs, or in the hypochondriac or chondiliac regions. Sometimes there is cough, difficulty in breathing, palpitation or irregular action of the heart, or imperfect syncope, and almost universally a sense of fluttering about the præcordia.

915. The appetite is generally impaired. There is frequently a morbid appetite for acids, or for magnesia. The bowels are constipated—a state which sometimes leads to diarrhœa. The fæces are dark-coloured, fœtid, and scanty. The urine is frequently loaded.

916. The catamenia become irregular, are preceded and attended by much pain of the back and region of the uterus, and sometimes, but not always, become slowly defective in quantity, and pale in colour.

II. *The Confirmed Form.*

917. *The Symptoms.* In the confirmed stage of this affection the state of the complexion and general surface is still more marked. The countenance is still more pallid, the prolabia and the gums exanguious, or the prolabia, especially the upper one, have a slight lilac hue, and the integuments are tumid. The skin is smooth, but becomes preternaturally dry. The integuments are puffy, opaque, and pale, or yellowish, and there is a tendency to œdema of the feet. There is frequently scarcely any further loss of flesh. Slight exfoliation of the nails.

918. The tongue becomes clean and smooth; but it is pale, with a slight but peculiar appearance of transparency,

and of a pale lilac hue; it remains a little swollen and indented.

919. The patient is affected with languor, lassitude, and even serious weakness, being at once reluctant and unable to undergo fatigue.

920. There are often attacks of severe pain of the head, or of equally severe pain of the side; and repeated bleeding, leeches, and blisters, are usually employed, affording a temporary respite from these complaints.

921. There are also, sometimes fits of dyspnœa, of palpitation of the heart, or fainting, with beating of the carotids.

922. The pulse is rather frequent, often about 100, and easily accelerated and rendered irregular by mental emotion.

923. The appetite is sometimes impaired, occasionally greater than natural, and very frequently depraved, inducing a longing or constant desire for some indigestible substance, as acids or pickles, magnesia, chalk, cinders[1], and coffee-grounds, tea-leaves, flour, grits, wheat, &c.

924. The bowels are slow and constipated—a state which sometimes alternates with diarrhœa, and induces melæna; the stools are dark, fœtid, and scanty.

925. The catamenia are attended with pain, and become paler, and less in quantity, and often cease altogether.

III. *The Inveterate Form.*

926. I. *The Symptoms.* In the inveterate form of Chlorosis all the symptoms assume an aggravated character.

927. There is a very slow but progressive loss of flesh. The languor becomes a state of permanent debility.

928. The œdema increases and takes on the aggravated form of anasarca.

929. There is less appearance of mere disorder, and more of the character of disease. Or those local affections which existed in a less continued manner before, now become

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[1] In the West Indies a similar disease prevails amongst the Negroes, who are termed Dirt-eaters.

either permanent, or are induced by the lightest causes, and the patient can scarcely bear the most ordinary occurrences of domestic life, and perhaps remains always in bed.

930. Sometimes there is an almost permanent pain of the head, perhaps with intolerance of light or of noise.

931. Sometimes there is pain of the chest, with tenderness, difficulty in breathing, and cough.

932. Frequently there are pain and tenderness of the abdomen, with sickness and constipation, or with diarrhœa.

933. Different symptoms reign in different instances,—as some hysteric or spasmodic affection: a state of locked jaw, closed hand, contracted foot, or twisted limbs; palpitation of the heart; hurried or suspended respiration; long fits of coughing; hiccough; retention of urine.

934. II. *The Varieties.* Besides the forms of Chlorosis which have been described, there are some varieties of deranged complexion, which require to be distinctly noticed.

935. 1. Sometimes there is *less pallor* of the countenance and prolabia, *but a ring of tumid darkness round the eye*, and perhaps a tumid state of the upper lip. 2. Sometimes the *complexion* is of a more yellow or *icterode hue.* 3. Sometimes the complexion is of a peculiar *lead-colour.* 4. There is sometimes a peculiar state of *coldness*, *cold moisture*, and *lividity of the hands and fingers*, and the lilac hue of the nails, the tips of which often become white and opaque. 5. The state of Chlorosis consequent on hæmorrhagy also deserves to be distinctly noticed; there are paleness and slight yellowness of the complexion, exanguious prolabia, a greater degree of loss of flesh, and great fluttering and nervousness. There are also more chronic forms of this affection, in which there is a continued, though variable, state of *sallowness*, of *yellowness* or *icterode hue*, of *darkness*, or of a *wan*, *squalid*, or *sordid paleness of complexion;* or a *ring of darkness surrounding the eyes*, and extending a little, perhaps, towards the temples and cheeks, and sometimes encircling the mouth, without tumidity, without paleness of the prolabia, and without much tendency to œdema.

936. III. *The Complications.* Such are the usual symptoms of the different stages of Chlorosis. But, as in acute dyspepsia, some of these symptoms are liable to be much

aggravated, and to assume the form of serious local disease. The following list of these complications possesses therefore great interest:—

1. *Pain of the Head;*
2. *Cough and Dyspnœa;*
3. *Palpitation of the Heart;*
4. *Pain and Tenderness of the Side;*
5. *Pain and Tenderness of the Abdomen;*
6. *Constipation; Diarrhœa; Melæna;*
7. *Menorrhagia;*
8. *Leucorrhœa;*
9. *Tendency to Hæmorrhagy; Purpura;*
10. *Hysteric Affections;*
11. *Œdema; Anasarca; Erythema Nodosum.*

937. IV. *The Pathology.* There is occasionally a remarkable state apparently of the capillary system, giving rise to hæmorrhagic tendency,—to epistaxis, melæna, hæmatemesis, menorrhagia, and even purpura. Still more generally, the *blood* discharged from the nose, or taken from the arm, and the *catamenia*, become almost aqueous and colourless; so that this affection presents an instance in which the vital fluid undergoes considerable change. I have seen the blood scarcely tinge the sheets, and I have seen it resolve itself almost entirely into serum with scarcely any crassamentum. It is a state of bloodlessness altogether peculiar, and not unattended with danger. This influence of the state of bloodlessness which occurs in Chlorosis, upon the encephalon, has not been duly noticed by practical writers; I shall therefore mention this subject a little more in detail than some others.

938. I have, within the last eight years, seen four cases of fatal Chlorosis. The fatal event took place in one case suddenly: the patient was seized, quite unexpectedly, with the symptoms of dissolution whilst sitting up for a few minutes in a chair, when in a state of apparent convalescence from a feverish cold, and speedily expired. In the second case, a feverish cold led to the symptoms of a more gradual sinking. In the third, fever, cough, and aphthæ, followed parturition, and issued in the sinking state. The fourth and

last case issued, in the most insidious manner, in a series of symptoms of an equally insidious sinking of the vital powers.

939. Of the second and third cases no post mortem examination could be obtained. In reference to the first and last, and especially the last, I was more successful in my entreaties to obtain this satisfactory elucidation of the nature of disease.

940. Miss H***, aged eighteen, was well, with the exception of a little constipation, when she went to school at Boulogne in 1828, aged thirteen.

941. She remained a year and returned home. She went again in six weeks, and remained another year; and, during this year, the catamenia did not appear, and the bowels were constipated. On her return she looked pale, but she was stout, and grown, lively, and in good spirits.

942. A fortnight after her return the catamenia appeared, but they were pale and scanty; the bowels were constipated.

943. She continued pretty well until July 1833, when she became sallow, pale, affected with pain of the head, and shortness of breath, and coldness and dampness about her person; the catamenia gradually diminished in quantity and colour; the bowels were constipated, and she became fond of concealing and eating dry rice, coffee, and tea leaves.

944. About a year ago the paleness was augmented, and the ankles began to swell; leeches were applied to the temples.

945. During the last summer the paleness augmented still further, and the œdema assumed the character of anasarca; the perspiration became offensive; the catamenia were scanty, pale, and yellowish, or greenish, and varying much in colour, but never red.

946. December 13th, 1834,—I saw Miss H*** seven days ago: the countenance was pale and slightly œdematous; the legs anasarcous; the head affected with mild delirium, with a degree of intolerance of light and noise; the breathing was hurried, and rather audible and rattling, with cough; the pulse 130, and throbbing; the abdomen tumid.

947. These symptoms continued; at first there was

delirium; afterwards there were dozing and slight coma; afterwards the mind was clear; at length the coma returned: the respiration became momentarily suspended and the inspiration sudden, and sometimes *catching;* the abdomen became decidedly tympanitic, with the escape of much flatus; the pulse continued at 130 and sometimes 140, with fulness and throbbing.

948. The strength gradually declined, and dissolution took place rather suddenly after the free evacuation of the bowels.

949. On examination, there was effusion of serum and of opaque lymph under the arachnoid at the summit and base of the brain: there was an effusion of six drams of serum into each ventricle.

950. The summit of each lung was extremely pale, œdematous, and crepitant between the fingers; large portions of foaming lymph exuded from the incisions made into them; the root of each lung was red, not crepitant, and sank in water; and, on making incisions, much fluid exuded without *foam* or bubbles of air. The bronchia were injected. Each cavity of the thorax contained five or six ounces of serum, and the pericardium one ounce; the heart was natural.

951. The viscera of the abdomen, except the ovaria, were natural, but pale: there was no effusion; the tympanitis had disappeared. The ovaria were large, and one of them contained a cyst replete with serum, of the size of a large walnut.

952. There was considerable adipose substance.

953. This case is important in every point of view. It is important in regard to the nature of the disease, of which it is an example, demonstrating, as it does, the tendency of that disease to induce, not merely external dropsy, but effusion under the arachnoid and into the pleuræ, the pulmonary cellular membrane, &c. It is important too, as an unequivocal representation of the disposition to such organic changes in cases of bloodlessness and exhaustion. It is also important, as establishing the fact, that, not only serous effusion, but the deposit of coagulable lymph, may take place, without inflammatory action, in similar circumstances; and

that, consequently, such deposit of lymph is no proof of inflammation.

954. In a recent fatal case of delirium tremens, serum was found effused under the arachnoid and into the ventricles, whilst opaque lymph was deposited under that membrane. Similar appearances observed in Chlorosis enable us to say that such an appearance cannot be adduced in proof of inflammatory action. For no one can imagine that the appearances which have been detailed, as observed in Chlorosis, can be any other than the peculiar effects of this disease; or that the deposit of lymph under the arachnoid can depend upon any cause different from that which induced the effusion of serum under this membrane, and from the pleura, and the pulmonary and cutaneous cellular membranes.

955. I need scarcely add the remark, that Chlorosis must not be viewed as totally free from danger. When anasarca has supervened to great pallor, there is the fear of effusion into the encephalon, and of a fatal result, which is sometimes of the most insidious, sometimes of the most sudden kind.

956. V. *The Treatment* of this form of disorder of the general health must be begun by a due evacuation of the bowels; but the use of mercurials, and of active purgatives in general, requires still greater precaution.

957. Of the class of aperient remedies, aloës and rhubarb appear to me to be best adapted to the cure of Chlorosis; the first of these may be given in the form of the decoction, the wine, the simple and compound tinctures; the latter, in those of the infusion and the tinctures, and these may also be variously combined together, and, if quite necessary, with manna, and the Rochelle salt.

958. When the bowels have, by these means, been fully but gently regulated for some time, different preparations of iron, the ammoniate, the iodide, but especially the sulphate, become specific in this disorder,—gradually restoring the complexion, the general surface, and the uterine discharges, to their healthy state.

959. The painful affections of the head, sides, and abdomen, are much relieved by the application of a spiritous

lotion to the former part, or of a liniment composed of the soap liniment, the sal volatile, and the liquor ammoniæ, to the latter, or, if necessary, by a blister.

960. For the attacks of palpitation, of panting, or of the fits of coughing, the spiritus ammoniæ aromaticus, æther, hyoscyamus, and the tinctura opii, are useful remedies.

961. In cases of extreme languor, the carbonate of ammonia is a valuable remedy. It may be given in pills of three grains, prepared with bread, three times a day.

III. HYSTERIA.

962. Hysteria generally occurs in cases of the acute dyspepsia, or of chlorosis. But it is occasionally induced by severe mental emotions, as excessive joy or grief; and a less curable form of the affection has been occasioned by surprise, especially by fright. It is almost peculiar to the female sex.

963. This affection is generally denoted by combining some considerable emotion of the mind, denoted by sighing, sobbing, tears, or laughter, with a sense and expression of suffocation, and with some urgent affection of the head, heart, respiration, stomach, or muscular system.

964. Hysteria occurs in three forms: the Mild, the Severe, and the Inveterate.

I. *The Mild Form.*

965. *The Symptoms.* The mild form of Hysteria subsists as a tendency to alternate high and low spirits, to fits of laughter, to frequent deep sighing, and to tears. A fit of laughter, or of crying, sometimes takes on an aggravated character; the laughing, or the sobbing, becomes immoderate, convulsive, and involuntary, and there is frequently a peculiar spasmodic chucking in the throat.

966. The countenance changes, being alternately flushed, and pale, and denoting great anxiety.

967. There is frequently an urgent difficulty in breathing, with much rapid heaving of the chest. Sometimes a dry, spasmodic, and violent fit of coughing occurs. There is generally a sense, and appearance, and an urgent fear of,

impending suffocation. In different instances there is palpitation, hiccough, retching, or borborygmus.

968. The patient is despondent, and exaggerates all her sufferings.

II. *The Severe Form.*

969. *The Symptoms.* The severe form of Hysteria consists in a various attack, catenation, or combination of the following symptoms:

970. The commencement, course, or termination, of this, and indeed of every, form of Hysteria, is generally marked, and the case distinguished, by the signs of some inordinate mental emotion,—joy, grief, or other affection,—which constitute the most characteristic symptoms of this disorder, and have appeared to be literally *hysterical.*

971. The attack is frequently ushered in by an unusual appearance of the countenance,—a rapid change of colour, rolling of the eyes, distortion or spasmodic affection of the face.

972. The extremities are apt to become very cold.

973. A state of general or partial, of violent or of continued, convulsion, or fixed spasmodic contraction, takes place, and displays every possible variety in mode and form.

974. The severe form of Hysteria sometimes consists chiefly in a severe, general or partial pain and throbbing of the head. Occasionally this pain is confined to one particular spot, and is so acute as to have obtained the appellation of clavus hystericus.

975. Sometimes there is intolerance of light and noise. Sometimes a state of stupor; sometimes delirium.

976. The respiration is frequently much affected:—an oppressive and suffocative dyspnœa takes place; or the breathing is rapid, anxious, and irregular; or variously attended with sobbing, sighing, much rapid heaving of the chest, and sometimes with a spasmodic action of the diaphragm inducing a peculiar elevation of the abdomen, or an equally peculiar successory movement of the trunk in general; sometimes the respiration appears to be suspended altogether for some time, the pulse continuing to beat as before.

977. A crowing noise, or screaming, is apt to occur in this affection. There is occasionally, hoarseness, or even an entire loss of the voice, continued for some time.

978. There is sometimes a painful, violent, dry, hoarse cough, continued or recurrent in paroxysms.

979. There is occasionally acute pain of the chest or abdomen.

980. Palpitation of the heart and syncope are usual affections in the Hysteria. The pulse is otherwise little affected.

981. There is frequently an urgent sense of suffocation, accompanied with the feeling of a ball ascending into the throat: this symptom is so peculiar as to have obtained the denomination of globus hystericus, and is considered as diagnostic of this affection.

982. Hiccough, and violent singultus; retching and vomiting; the sense of a ball rolling within the abdomen; borborygmus; a peculiar, great and sudden tumidity of the abdomen, apparently from flatus; constipation, &c. are usual symptoms in Hysteria, and sometimes recur in paroxysms, and sometimes assume a more continued form.

983. There is frequently difficulty or retention of urine, succeeded by a very copious flow of limpid urine.

III. *The Inveterate Form.*

984. *The Symptoms.* The Inveterate Form of Hysteria —id enim vitium quibusdam feminis cerebro revertens perpetuum evadit,—consists sometimes in an almost perpetual agitation of some part of the body, the limbs, the respiration, the throat, or the stomach;—and sometimes in a state of continued contraction of the hand or foot, or of some other part.

985. In different instances too, there is a continued state of nervousness or agitation from the slightest noise or other cause,—of paralytic, epileptic, or spasmodic disease,—or of imbecility of the mind.

986. *The Varieties* of Hysteria are more numerous even than those of the other forms of disorder treated of in this chapter. They are also more *acute*, *urgent*, and *vio-*

lent. The following list, it is hoped, will be found tolerably complete:—

1. *Convulsion.*
2. *Pain of the Head.* 3. *Delirium.* 4. *Stupor.*
5. *Pain of the Chest.* 6. *Dyspnœa.* 7. *Violent Cough.* 8. *Apparent Suspended Respiration.* 9. *A Painful Affection of the Diaphragm.*
10. *Imitation of Croup; and appearance of*—11. *Impending Suffocation!*
12. *Palpitation of the Heart.* 13. *Syncope.*
14. *Dysphagia.* 15. *Hiccough.* 16. *Retching, and Vomiting.* 17. *Pain of the Abdomen.*
18. *Dysury.* 19. *Retention of Urine.*
20. *Apparent Paralysis.*
21. *Trismus.* 22. *Tetánus.* 23. *Contracted Hand.* 24 *Distorted Foot.* 25. *Twisted Legs.*

987. The attention has, I think, been too exclusively directed to the paroxysm of *convulsion* in this affection. Some of the *other* varieties in the attack of the Hysteria are almost equally frequent. This affection is characterized, indeed, by affecting in the same, or in different instances, singly or conjointly, all the several systems which constitute the human frame:—the organs of animal and of organic life;—the different sets of muscles, voluntary, involuntary, mixed, and sphincter; the faculties of the mind, and the emotions of the heart;—the functions of the head, the heart, the stomach, &c. It is in thus viewing Hysteria, that the diagnosis is often formed between the different and very various attacks, and other affections having a different origin, but of which it is the *imitator*,—for, as Sydenham observes—"nullos fere non *æmulator* ex iis affectibus quibus atteruntur miseri mortales."

988. Errors in the diagnosis are to be avoided by a cautious inquiry into the history of the case, the mode of attack, the immediate, exciting cause or causes, and the early symptoms;—by a cautious observation of the existing symptoms,—their character of hurry and urgency, their multiplicity, and their conjunction with others of an unequivocal character;—and by cautiously waiting, and watching the

accession of further symptoms which may tend to unveil the obscurity of the case. The causes are frequently a disordered state of the general health,—the recurrence of the catamenial period,—and some mental emotion; the early symptoms are *laughter*, *tears*, *globus*, or other symptoms of the same character; the mode of attack is usually marked by hurry and alarm; and the course of the affection is frequently attended by some symptom or event of the same diagnostic character.

989. Sydenham enumerates the following forms of Hysteria:—apoplexy, epilepsy, pain of the hand, palpitation, perpetual dry cough, affections resembling the iliac passion, or a fit of stone, vomiting, and purging, pain of the back, tooth-ache, tumor of the fauces, shoulders, hands, thighs, and legs, coldness of the external parts. He adds, "It should seem that no chronic disease occurs so frequently as this; and that, as fevers with their attendants constitute two thirds of the diseases to which mankind are liable, upon comparing them with the whole tribe of chronic distempers, so hysteric disorders, or at least such as are so called, make up half the remaining third part, that is, they constitute one moiety of chronic distempers. For few women (which sex makes one half of the grown persons) excepting such as work and fare hardly, are quite free from every species of this disorder; and several men also, who lead a sedentary life, and study hard, are afflicted with the same[1]. And it would take too much time to enumerate all the symptoms belonging to hysteric diseases; so much do they vary and differ from each other. Democritus, therefore, in writing to Hippocrates, seems to have reason to assert, though he mistook the cause of the disease, *that the womb was the origin of six hundred evils and innumerable calamities*[2]."

990. Heberden treats at length of the varied forms of Hysteria, throughout his classical Cmmentaries.

991. Recently, Madame Boivin and M. Dugès have enumerated, as distinct forms of Hysteria, the suffocating, the apoplectiform, the syncopal, the cardiac, the pertussiform.

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[1] Op. cit. p. 367.

[2] Ibid. p. 375.

I have given these epithets because they convey useful information.

992. I must add that M. Louyer-Villermay has distinguished, by the term *Hystericism*, certain spasmodic affections which sometimes accompany dysmenorrhœa, metritis, puerperal peritonitis, and serious uterine hæmorrhagy.

993. Peculiar painful affections have recently been described by the Drs. Griffith, Sir Astley Cooper, and Sir Benjamin Brodie, as Hysteric:—

1. *Pain along the Spine;*
2. *Pain of the Mamma;*
3. *Pain of the Knee;*

and to these affections may probably be added that described by the late Dr. Gooch, under the designation of the

Irritable Uterus.

994. II. *The Treatment.* The remedies in Hysteria are such as are required by the state of constitutional disorder, and especially by that of the stomach and bowels, and by that of the uterus, the functions of which require to be restored as quickly as possible. Aperient medicines, fomentations of the feet, and of the lower parts of the abdomen, are amongst the principal remedies.

995. Then follow the means of relieving the urgent symptoms, which are as various as those symptoms themselves.

996. For the affection of the head, a lotion of spirit of wine and rose-water is of great service, and, if necessary, a small blister may be applied to the nape of the neck; with these remedies, the tincture of hyoscyamus, sal volatile, and æther may be given, or a saline effervescent draught.

997. For the pain of the chest or abdomen, a liniment with sal volatile, or a fomentation of hot water, may be applied, with similar internal remedies.

998. The same observations apply to the other forms of hysteria. In all, it is of the first importance to act upon the alimentary canal and uterus, then to soothe, and lastly to relieve, the local pain or distress.

CHAPTER V.

ON THE HÆMORRHAGES.

999. AFTER inflammation, tubercles, dyspepsia, &c. hæmorrhagy is amongst the most frequent and important of diseases, especially as it occurs in the brain and the lungs, in the substance of other organs, and from the stomach, the intestines, the kidney and bladder, the uterus, &c.; and it bears, in different instances, a certain relation to each of those diseases.

1000. The use of the term hæmorrhagy must be extended beyond its literal meaning. The congestion which precedes the flow of blood cannot be distinguished by the generic term, from the clot of blood or the flow of blood, when the parietes of the vessels have given way. They are different stages of the same affection, which must be distinguished by an epithet or in description.

1001. The different forms of hæmorrhagy are very numerous, and all its forms are probably not yet distinguished.

1002. The first and simplest form is that which results from the interrupted return of the venous blood. In this manner, *congestion* first, then *effusion* of blood, occurs in the lungs and in the brain, and possibly in the substance of some other organs, in disease of the heart, and especially in contraction of the left auriculo-ventricular orifice. In this manner, congestion and effusion of blood occur in the course of the intestinal tube, from compression or obstruction in the course of the vena porta. I beg my reader most particularly to read § 81—102.

1003. The second form of hæmorrhagy is that which occurs from too forcible a projection of the blood from the heart. Thus, effusion into the brain is an effect of hypertrophy of this viscus.

1004. The third form of hæmorrhagy occurs—in cases in which the return of the venous blood is not impeded, or the flow of the arterial blood augmented—from disease of the minute vessels themselves, as we observe in some cases of hæmorrhagy into the brain or from the lungs; in cases of broken texture, tubercles; &c.

1005. A fourth form of hæmorrhagy occurs, far more frequently than is supposed, in the acute and other forms of dyspepsia. It takes place from the mucous surface, and especially from those of the nostrils, the stomach and intestines, constituting the most frequent forms of hæmatemesis and melæna. It also doubtless takes place from the mucous lining of the gall ducts, the kidney, the uterus, &c.

1006. But, besides these forms of hæmorrhagy, there are others, if possible, still more formidable:

1007. In one case, cysts of blood are formed in the parenchymatous substance of various organs, simultaneously, or in several parts of the same organ. M. Cruveilhier observes—"Several facts prove distinctly the connection which exists between hæmorrhages of different organs. But none is more so than that submitted to the Société Anatomique by M. Robert, one of its members. All the organs of the skin, the cellular tissue, the muscles; the brain, the lungs, the spleen, the liver, the pancreas, the uterus, &c. were studded with hæmorrhagic deposits. The lungs, especially, contained a great number. Unfortunately, no positive information could be obtained respecting the corresponding symptoms. There are states of the system in which spontaneous hæmorrhages with rupture may be manifested simultaneously in all or nearly all the systems of organs. These states have been particularly recognized in scorbutus. But, in the greater number of cases, one single organ is the seat of these hæmorrhages."

1008. In other cases there is less disposition to hæmorrhagy into the substance of organs, but the blood is poured out from the mucous menbranes, or immediately underneath the cuticle. This affection constitutes the *Purpura hæmorrhagica.*

1009. In the third place must rank the disease termed

Scorbutus; a disease totally distinct, I think, from purpura. In this disease, effusions of blood are found in the spleen, the liver, the uterus, the heart, &c.

1010. Besides the forms of hæmorrhagy already enumerated, I have witnessed another, which displayed, on dissection, numerous distinct effusions of blood in the substance of the brain, together with an obvious admixture of pus or coagulable lymph with the blood in the large veins: the eyes had become affected with chemosis and ulcerations, and had burst.

1011. The different forms of hæmorrhagy may, then, be arranged in the following manner:—

I. TOPICAL HÆMORRHAGY.
  1. *From obstructed return of the Venous Blood.*
  2. *From excessive impulse of the Arterial Blood.*
  3. *From disease of the Minute, or Capillary Vessels.*

II. DYSPEPTIC HÆMORRHAGY.
  1. *Epistaxis.*
  2. *Hæmatemesis.*
  3. *Melæna, &c.*

III. GENERAL HÆMORRHAGY.
  1. *Cysts of Blood in several Organs, or several parts of the same Organ.*

IV. PURPURA.
  1. *Simplex.*
  2. *Hæmorrhagica.*

V. SCORBUTUS.

I. TOPICAL HÆMORRHAGY.

1012. The Hæmorrhagy which arises from *obstructed return of Venous Blood* has been fully described and illustrated § 81—102.

1013. That form of Hæmorrhagy which arises from *excessive impulse of the Arterial Blood* is treated particularly by M. Bricheteau, in his "Clinique Medicale," p. 133 and 214. Hypertrophy of the *left* ventricle of the heart is described as inducing hæmorrhagy in the *Brain;* hypertrophy of the *right* ventricle, that of the *Lungs.*

1014. M. Lallemand particularly insists that it is only when there is no source of *obstruction* in the course of the *aorta,* as the *cause* of the hypertrophy of the left ventricle, that this latter can become a cause of cerebral hæmorrhagy, or apoplexy[1].

1015. M. Louis observes—"Between 1821 and 1827, I collected 27 cases of hypertrophy with dilatation of the right ventricle of the heart; yet none of the patients had hæmoptysis, although six of them had dilatation of the pulmonary artery and its divisions, the manifest proof that the blood had been carried into the parenchyma of the lungs with an unnatural degree of force[2]."

1016. Hæmorrhagy from *Disease of the Minute or Capillary Vessels* occurs under the form of *Epistaxis, Hæmatemesis, Melæna,* and *Hæmaturia.*

1017. These forms of Hæmorrhagy are frequently complications of

II. DYSPEPSIA.

1018. They are then to be treated on the principles laid down for the cure of that disease, § 888, 901. Epistaxis occasionally requires the quinine. I have known a hæmaturia to be induced by exposure to cold, and relieved by the warmth of bed, so distinctly as to leave no doubt upon this influence of temperature.

1019. The history and symptoms of that form of hæmorrhagy in which distinct effusions of blood occur in various organs of the body, § 107, are altogether unknown.

1020. It only remains for me to treat, in this place, of the constitutional symptoms of Purpura, and of Scorbutus, which I propose to do at considerable length.

IV. PURPURA.

1021. Purpura occurs under three forms:—1. Purpura simplex, 2. Purpura hæmorrhagica, and 3. Purpura urticans.

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[1] Recherches de l'Encephale, t. i, p. 44; note.

[2] Examen de l'Examen, p. 35.

It is the second which is principally to occupy us in this place.

I. *Purpura simplex.*

1022. The Purpura simplex is characterized by an appearance of petechiæ, or dark red spots, without much disorder of the constitution, but with paleness, languor, debility, and pain of the limbs. They are diffused chiefly over the arms, legs, breast, and abdomen, being largest on the legs, though seldom confluent. In some cases, the appearance of the petechiæ is preceded, for a day or two, by a general red efflorescence.

II. *Purpura hæmorrhagica.*

1023. I. *The History.* The usual causes of this disease are a sedentary mode of life, poor diet, impure air, anxiety of mind, laborious work. Of seventeen patients seen by Dr. Willan, two only were men; nine were women, of whom four were beyond the age of fifty, three were boys, and three infants, not more than a year old. This disease is sometimes preceded by pallor and lassitude. Its duration is uncertain, and varies from fourteen days to as many months. It combines hæmorrhage, vibices, and anasarca.

1024. II. *The Symptoms.* The purple spots appear first on the legs, and, at uncertain periods, on the thighs, arms, and trunk of the body, the hands and face being generally free from them. They are numerous on the tonsils, uvula, palate, gums, tongue, and inside of the cheeks and lips, where they are sometimes raised and papulated, and discharge blood on the slightest pressure. The colour of the spots on the surface of the body is at first a bright red, but it soon becomes purple or livid; the cuticle over them is smooth and shining, but not elevated. They are nearly of a circular form, but of different sizes; sometimes few and distinct, sometimes numerous and coherent; sometimes distributed uniformly over the surface, sometimes in irregular clusters. Many of the patches disappear in a week or two, while fresh ones arise in other places. They are largest and most vivid in the evening or night, smaller and of a yellowish hue during the day. Generally they are interspersed with vibices or livid patches resembling the effects of a bruise.

1025. The hæmorrhage takes place from the nostrils, fauces, gums, lips and cheeks, the tongue, the lungs, the stomach or intestines, or from the uterus even, in women of an advanced age. It sometimes precedes, sometimes succeeds, and sometimes accompanies the eruption; it is at first profuse, and cannot be easily restrained; in some cases it returns daily at a stated hour; after a week or two it becomes less violent and frequent. When the hæmorrhage flows from the gums and mouth, the spots on the surface of the body are numerous and smaller than usual, and the fauces, gums, and tongue, sometimes appear livid and tumefied. This complaint is attended with extreme debility and depression of spirits. The pulse is generally weak and frequent. Febrile paroxysms occur at intervals. Sometimes there are shiverings, sometimes heat without shiverings.—At a late period, anasarca takes place, first about the ankles, and subsequently in the thighs, body, arms, cheeks, and eyelids, with sallowness of the complexion, emaciation, and coldness of the extremities.

1026. III. *The Complications* may be enumerated thus:

I. *Petechiæ upon, or*
II. *Hæmorrhagy from,*
    I. *The Mucous Membrane of*
        1. *The Nostrils.*
        2. *The Gums, the Tongue.*
        3. *The Bronchia.*
        4. *The Stomach and Intestines.*
        5. *The Kidney or Bladder.*
        6. *The Uterus.*
    II. *The Serous Membranes.*
III. *Parenchymatous Hæmorrhagy.*
IV. *The Effects of Hæmorrhagy upon*
        1. *The Brain.*
        2. *The Heart, &c.*
V. *Anasarca.*

1027. The blood and the parenchymatous tissues have alike little cohesion: the former does not separate with serum and crassamentum, but forms a semi-fluid clot, of which the upper part resembles jelly in colour and consistence, and the lower, molasses; the tissues are broken by the slightest bruise or pressure.

1028. IV. The various *Treatment* which has been recommended comprises, 1. blood-letting, 2. purgatives, 3. sulphuric and other acids, 4. cinchona, 5. the spiritus terebinthinæ, &c.

V. SCORBUTUS.

1029. I. *The History.* Scorbutus is generally induced by a deficiency of fresh vegetable food. It is also occasionally referred to other errors in diet, to the respiration of a crowded or otherwise impure atmosphere, to excessive fatigue, anxiety, &c.

1030. II. Scorbutus is usually distinguished by a set of symptoms designated by the term *putrescent,* such as a spongy and ulcerated state of the gums, with extreme fœtor of the breath; gangrenous ulcers; a fœtid state of the urine, &c.

1031. The countenance and skin generally become peculiarly pale, and sallow, or yellowish, and tumid; there are extreme debility; a disposition to somnolency, to syncope, &c.; shortness of breathing; a feeble pulse, &c. Petechiæ and vibices appear on various parts of the body; the gums bleed; former cicatrices are dissolved, and the ulcerated surfaces bleed, and perhaps slough; there is hæmorrhagy from the bowels, the kidney or bladder, the uterus, &c.; serous effusions take place into the cellular membrane and the cavities.

1032. III. *The Morbid Anatomy* of Scorbutus consists of the effusion of blood, or of bloody serum, or of serum alone, into the various parenchymatous textures, or serous cavities of the body, or from the mucous membranes; of an uncoagulable condition of the blood, and of softening of the solids.

1033. IV. The *Prevention* and the *Cure* of Scorbutus consists in the administration of fresh and vegetable food, but, above all, of citric acid.

1034. Sir Gilbert Blane observes[1]—"The scurvy, a disorder incident chiefly to a sea life, but by no means peculiar to it, has been nearly eradicated by lemon juice, or more properly the citric acid; for the juice of limes, Seville oranges, unripe China oranges, and in short of all the species of the botanical *genus citrus*, or the natural order of fruits called *Hesperidæi*, possess the same virtue. This was known to be a remedy for the scurvy far superior to all others two hundred years ago, as appears by the writings of Woodall[2]. It is singular that this important fact should have been hardly known for more than one hundred years[3] afterwards, when the late Dr. Lind, of Haslar hospital, revived and diffused this valuable piece of knowledge by his writings. It was this author who first clearly stated the singular powers of this remedy in the cure of scurvy; for Woodall only affirmed that its virtues were far superior to all other remedies. Notwithstanding this, the navy continued to suffer severely from this disease, till the order for a general supply of lemon juice, twenty-seven years ago. This salutary measure was accomplished by a representation from the Medical Board of the navy in the year 1795, during the administration of Earl Spencer, from whose enlarged and benevolent mind every thing was to be expected. One of the most impressive parts of their argument, was built on the report of the effects of it in the Suffolk of 74 guns[4]. This ship sailed from England on the second of April 1794, and an experiment was made of supplying her with a quantity of lemon juice sufficient to serve out two-thirds of a liquid ounce every day, to every man on board. This was mixed with their grog, along with two ounces of sugar. She was twenty-three weeks and one day on the passage, without having any communication with the land, and arrived in Madras roads on the 11th of September, without losing a man, with only fifteen men on the sick list, all slight cases, and none of them affected with the scurvy. This disease appeared in a few men in the course of the voyage, but soon disappeared on an increased dose of lemon juice being administered. Let this fact be contrasted with the state of the Channel fleet in 1780, as described by Dr. Lind, which was over-run with scurvy and fever, and unable to keep the sea, after a cruise of ten weeks only: and let the state of this fleet be again contrasted with that of the Channel fleet in 1800, as described by Dr. Baird, which, by being duly supplied with lemon juice, kept the sea for four months without fresh provisions, and without being affected with scurvy."

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[1] Select Dissertations, p. 5.

[2] His work is entitled "The Surgeon's Mate, or Military and Domestic Medicine, by John Woodall, master in surgery:" London, 1636, p. 165. He concludes his praises of it by saying "I dare not write how good a sauce it is at meat, lest the chief in the ship should waste it in the great cabin, to save vinegar." See a still earlier testimony in Purchas's Pilgrim, p. 158.

[3] Treatise on the Scurvy, p. 153 and 543. Third Edit. 1772.

[4] See more concerning the first general supply of lemon juice, in Observations on the Diseases of Seamen, p. 490, ed. 3; by Gilbert Blane, M.D. Lond. 1799.

1035. It is a question of intense interest how far the three last morbid affections are allied; and the entire subject of Hæmorrhagy is one of great promise to the new inquirer.

1036. The hæmorrhages are not remotely allied to the dropsies, of which I propose next to treat. The effusions and the urine in the dropsies frequently contain the albuminous, and sometimes even the colouring part of the blood; and Hæmorrhagy within the brain frequently occurs in these diseases. Dropsy, on the other hand, frequently supervenes in the hæmorrhages.

CHAPTER VI.

ON DROPSIES.

1037. THE transition is easy from the hæmorrhagies to the Dropsies, and it would be difficult to find a subject of greater obscurity, difficulty, and interest. A few years devoted to the investigation of Dropsy, its varieties, causes, nature, and treatment, could not fail to produce a most valuable contribution to medical science.

1038. Dropsies differ, like the hæmorrhagies, according to their *causes*. The diagnosis and the treatment are, therefore, principally suggested by the history.

1039. I purpose, in this place, to enumerate the principal causes of this disease, and to construct an arrangement or tabular view of the subject upon this principle.

1040. The *first* cause of Dropsy which I shall mention is *inflammation*. From this cause we have frequently general anasarca, and effusions from the several serous membranes, as the arachnoid, the pleura, the pericardium, the peritonæum, the tunica vaginalis testis, &c.

1041. The *second* cause of Dropsy is some exanthematous disease, and especially scarlatina.

1042. A *third* source of Dropsy has been pointed out by Dr. Bright, as consisting in disease of the kidney.

1043. A *fourth* cause of Dropsy is debility, exhaustion from loss of blood, &c.

1044. A *fifth* and frequent cause of Dropsy is obstruction to the flow of the venous blood: it takes place in disease of the heart, disease of the lungs, disease of the liver, &c.

1045. These various forms of Dropsies may be thus arranged:

- I. INFLAMMATORY DROPSY.
- II. EXANTHEMATOUS DROPSY.
- III. NEPHRITIC DROPSY.
- IV. DROPSY FROM EXHAUSTION, DEBILITY, ETC.
- V. DROPSY FROM OBSTRUCTION TO THE VENOUS CIRCULATION.

1046. Dropsy assumes various *local* forms, and is hence divided into—

- I. HYDROCEPHALUS.
- II. HYDROTHORAX.
- III. ASCITES.
- V. ANASARCA.

These various local forms of Dropsy may result from each of the causes enumerated in § 1038-1041. They will, however, demand a separate consideration.

I. INFLAMMATORY DROPSY.

1047. I. *The History.* This form of Dropsy generally takes place rather suddenly, and is to be traced to wet and cold.

1048. II. *The Symptoms* consist in the appearance of tense anasarca, observed *first* in the *face*, but soon becoming *diffused*, and generally combined with dyspnœa, and frequently with the signs of effusion into the head, thorax, or abdomen, and with a coagulable and occasionally a sanguineous condition of the urine.

1049. Dr. Abercrombie describes a species of Dropsy which seems to belong to the inflammatory: he says—" The disease comes on suddenly, and generally affects persons in the vigor of life. It is usually ascribed to sudden exposure to cold, especially after the body has been previously overheated. The first symptom is an oppression and uneasiness in breathing; and, in a short time, frequently in a few hours, or in the course of the same day, this is followed by the dropsical swelling. The affection of the breathing varies considerably in different cases. In some cases there is only a feeling of oppression and tightness in breathing, without pain or cough; in others, the breathing is quick, short, and frequent; in some, there is pain, increased by a full inspiration, with sharp painful cough; and in others, there is great oppression in breathing, preventing the patient from lying, except in one particular posture, or even preventing him from lying down at all. The pulse is, in some cases, a little frequent, but, in others, it is not above the natural standard. It is sometimes of good strength, but frequently rather weak, and in some cases irregular. The anasarcous swelling is commonly observed first in the face; from this it extends downwards upon the trunk of the body, and then to the extremities. This progress was in one case so remarkable, that even at night, after the patient had been sitting up through the whole day, he was affected with a great degree of anasarca, down to the middle of the legs, whilst the feet and ankles were free from it; next day, the feet and ankles were affected also. This peculiarity, however, does not occur universally, for, in some cases, the swelling is first observed in the legs; but, in general, the face is affected at a very early period. The urine is scanty, and high-coloured; in some cases it is coagulable, but in others there is no trace of albumen. If the disease be now allowed to go on, the swelling increases, and the breathing becomes more and more oppressed: it may be fatal in a few days, or it may be drawn out to several weeks[1]."

1050. III. *The Morbid Anatomy* varies according as the Dropsy is confined to the cellular membrane, or extended to the serous membranes; in the latter case there is frequently the effusion of coagulable lymph, as well as of serum, from the serous surfaces. There is frequently peripneumonia, or œdema of the lungs.

1051. IV. *The Treatment.* Dr. Abercrombie observes—"The most decided benefit is experienced from early and free blood-letting; and, in a recent case, it is to be repeated till the pulmonary symptoms are relieved. This effect I have generally observed from one or two full bleedings; and it is to be kept in mind, that, in such cases, the strength of the pulse is a very uncertain guide; for, when the transmission of blood through the lungs is much impeded, we frequently find that the pulse is small, and even irregular; and that it improves in strength, and becomes regular, after copious blood-letting. When the pulmonary affection is removed, the dropsical swelling often disappears, without the use of any remedy; and if the case has been recent, and treated with decision, this happens so rapidly, that, on the second day of the treatment, the swelling may be gone. In these cases, the urine, which was scanty and high-coloured, becomes copious, and of a natural colour, almost immediately after the pulmonary affection is removed. If the disease has been of longer standing, the progress may be slower and less favorable; and even after the pulmonary affection has been entirely removed, a course of diuretics may be required for carrying off the swelling[1]."

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[1] Edinb. Med. and Surg. Journ. vol. xiv, p. 163.

II. EXANTHEMATOUS DROPSY.

1052. I. *The History.* This form of Dropsy succeeds to some exanthematous diseases, but by far most frequently to *scarlatina;* and the blood drawn is buffed and cupped. Its first appearance is generally on the *twenty-second* or *twenty-third* day after the commencement of the preceding fever: it may, however, appear so soon as the *sixteenth*, and so late as the *twenty-fifth*. It occurs only in infants and young persons. It is frequently seen after *mild* cases of the scarlatina.

1053. II. *The Symptoms.* This form of Dropsy *begins* with languor and feverishness, with sickness and constipation. Its first appearance is usually in the *face;* it is apt to spread to the *hands* rather than the *feet;* it rarely extends over the entire surface. The pulse becomes quick. The urine is passed frequently, in a turbid state, with numerous small *films* floating over it; it is frequently red, from containing the red particles of the blood, and coagulable on exposure to heat, from containing albumen.

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[1] Edinb. Med. Journ. vol. xiv, pp. 166, 167.

1054. III. *The Complications.* With this kind of Dropsy there is frequently—

I. *Meningitis; Convulsion.*
II. *Pleuritis; Hydrothorax.*
III. *Peritonitis.*
IV. *Enlarged Lymphatic Glands.*

1055. IV. *The Treatment* consists, *first*, in the use of the lancet; this is especially necessary when the head, thorax, or abdomen is affected. The patient should be placed perfectly upright and bled to the most incipient syncope: the tolerance of loss of blood is extraordinary.

1056. It is remarkable how totally different the *Indoles* of this dropsy is from that of the fever which had immediately preceded it! See § 675, 676.

1057. Leeches or cupping, and blisters, are useful as local applications.

1058. The bowels should be kept free by the oleum ricini.

1059. Diluents and the mildest fluid diet, and especially asses' milk, are extremely useful.

1060. I must not conclude my observations on this subject without noticing the admirable memoir of Dr. Wells[1], of St. Thomas's Hospital, one of the most remarkable physicians whom this or any other country has produced. He quotes Plenciz of Vienna, and Burserius of Florence, who have both written upon the scarlatinous dropsy. The latter author observes—that the bodies of several persons who had died of this disease at Florence, about the year 1717, having been opened, the lungs, pleura, intercostal muscles, diaphragm, kidneys, and intestines, were found more or less inflamed; that, peripneumony having hence been considered as the primary disease, and the dropsical swelling only as a consequence, blood was taken from the arm in the succeeding cases, once or oftener, as the occasion required; and that no one afterwards died of the dropsy who was thus treated. He adds—" Dr. Blane, on reading the foregoing paper, favoured me with the following remark. ' It has been my practice, for some years, to give repeated purges after scarlet fever, with a view to prevent Dropsy, following the analogy of the measles, and I do not recollect that dropsy has occurred when this practice was adopted.' "

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[1] Trans. of a Soc. for the Imp. of Surg. and Med. Know. vol. iii, p. 167.

III. ON NEPHRITIC DROPSY.

1061. I. *Literary History.* For our knowledge of this species of Dropsy we are indebted to Dr. Wells, M. Andral, and especially to Dr. Bright. Dr. Wells, in one of his admirable contributions to medical science, observes— " A soldier, forty-seven years old, in whose urine a considerable quantity of serum had been present, died dropsical.

1062. " He had also, shortly before his death, laboured under an inflammatory affection of his chest. The inferior lobe of the right lung was greatly inflamed, and its air cells were much compressed by effused coagulable lymph, mixed with some blood. The upper part of the diaphragm was also much inflamed. There was about a pint of watery fluid in the cavity of the chest. The kidneys were much harder than they usually are. Their cortical part was thickened and changed in its structure, from the deposition of coagulable lymph, and there was a small quantity of pus in the pelvis of one of them. I do not conclude, however, from these appearances, and those which were found in the former case, that the kidneys are always diseased, when the urine in Dropsy contains much serum. The morbid appearances of the kidneys might be altogether unconnected with the morbid secretion; and if they were not, a diseased action of the secreting vessels, which was in those cases induced by an organic disease of the glands, may probably arise from various other causes.

1063. " Soon after this paper was read to the Society, an elderly man died in St. Thomas's Hospital, who had become ascitical, after labouring some time under a disease in his chest, and dropsy of the skin, and whose urine had contained a considerable quantity of serum. On opening his body, all the parts which are naturally red, were found to be much paler than such parts usually are. The kidneys were larger and softer than if in a healthy state, and on the outside of both were several vesicles, partly embedded in their cortical substance, and containing an amber-coloured fluid. The greatest of them was of the size of a hazel nut. Both ureters were enlarged at their commencement. The liver was large and indurated; the colour of its surface and of that of the spleen was blue. The lungs adhered very generally to the ribs, and when they were cut, a fluid oozed from them which seemed to contain pus. The quantity of water under the skin was much less than it had been several weeks before his death. There were about fifteen pints of water in the abdomen, about one pint in the chest, about half an ounce in the ventricles of the brain, and a little between the pia mater and tunica arachnoides[1]"

1064. M. Andral observes—"Before Dr. Bright published his Researches (in 1827), I had inserted in the third volume of the Clinique Médicale (ed. 1, 1826, t. ii, p. 567), a case of granular kidney, coinciding with a dropsy, without disease of any other organs.[2]"

1065. Recently, Dr. Christian and the late Dr. Gregory have published some interesting observations on this subject[3].

1066. But it is undoubtedly to Dr. Bright that the profession and mankind are principally indebted for the detection of this disease; it is designated in the Parisian Hospitals, "la maladie de Bright."

1067. II. *The Causes* of Renal Dropsy are unknown.

1068. III. *The Symptoms.* Anasarca gradually ascending from the feet, suppressed perspiration, and albuminous urine, occasionally tinged with the red particles of the blood, are the pathognomonic symptoms of Nephritic Dropsy. The region of the kidney is sometimes tender on percussion or pressure.

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[1] On the presence of the Red Matter and Serum of Blood in the Urine of Dropsy, which has not originated from Scarlet Fever.—Trans. of the Soc. for the Imp. of Med. and Surg. Knowledge, vol. iii, p. 194.

[2] Anatomie Pathologique, t. ii, p. 624.

[3] See the Edinb. Med. and Surg. Journ. vol. xxxvi, xxxvii.

1069. IV. *The Complications.* There is, in this species of Dropsy, occasionally—

1. *An attack of Apoplexy;*
2. *Attacks of Epilepsy or Convulsion;*
3. *Inflammation of the Serous Membranes, especially of the Pleura.*

The *liver* is usually found free from disease[1].

1070. IV. *The Morbid Anatomy.* Dr. Bright observes —"In all the cases in which I have observed the albuminous urine, it has appeared to me that the kidney has itself acted a more important part, and has been more deranged both functionally and organically than has generally been imagined. In the latter class of cases I have always found the kidney decidedly disorganized. In the former, when very recent, I have found the kidney gorged with blood. And in mixed cases, where the attack was recent, although apparently the foundation has been laid for it in a course of intemperance, I have found the kidney likewise disorganized[2]."

1071. Dr. Bright describes three kinds of this disease of the kidney. In the *first*, the kidney loses its usual firmness and becomes of a yellow mottled appearance externally. The size of the kidney is not materially altered. In the *second*, the whole cortical part is converted into a granulated texture, and there appears to be a copious morbid interstitial deposit of an opaque white substance. The kidney is generally rather larger than natural. In the *third*, the kidney is rough and scabrous externally, and rises in numerous projections not much exceeding a large pin's head, yellow, red, and purplish; it is hard and inclined to be lobulated, and its texture approaches to a semicartilaginous firmness: there appears, in short, a contraction of every part of the organ, with less interstitial deposit than in the last variety[1].

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[1] Dr. Bright's Reports, vol. i, pp. 1—4; 93; 119. Ibid. vol. i, p. 4.

1072. V. *The Treatment* of this form of Dropsy is unknown. In one case the patient was cupped over the kidney, at stated periods: the albumen disappeared from the urine, except immediately after each application of the cupping instruments; and the anasarca greatly diminished. I directed the cupping to be done above or below the kidney, and the albumen and dropsy disappeared altogether. Many months afterwards, however, I learnt that the patient, a young lady, had become epileptic.

1073. Dr. Wells observes—"In the attempt to cure Dropsy, when serum was present in the urine, I gave for some time Peruvian bark, and steel conjoined with myrrh, if the urine was abundant, but, as far as I could see, without advantage. When the urine was scanty, I employed crystals of tartar, squills, and digitalis; but these medicines seemed to be less useful here, than in those cases of dropsy in which the urine contains no serum. I afterwards thought, that, as the presence of serum in the urine must arise from some diseased action of the kidneys, if a new action were excited in them, the former might be overpowered, and their healthy state at length restored. With this view I gave cantharides in large doses, for a considerable time, in five cases of Dropsy attended with serous urine[2];" and considerable benefit was derived from this remedy.

IV. DROPSY FROM DEBILITY; ETC.

1074. I. *The History.* This form of Dropsy occurs—

1. *From Loss of Blood.*
2. *In Chlorosis.*
3. *In Cachexia, &c.*

1075. II. *The Symptoms.* Dropsy from Debility begins *slowly*, and is first seen in the lower extremities; the urine is generally free from albumen. Dr. Wells observes—"Of nine cases of dropsy of the skin, apparently arising from weakness, the urine in seven was altogether without serum. Two of the latter occurred in old dysentery, one in chlorosis, one in chronic rheumatism, two after agues, and one after profuse bleeding, which had been employed to remove a great inflammation in the chest. In the eighth case, which took place after ague, and in the ninth, which occured in chlorosis of very long standing, there was a small quantity of serum in the urine.[1]"

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[1] Dr. Bright's Reports, vol. i, pp. 67—69

[2] Trans. of a Soc. for the Imp. of Med. and Surg. Know. vol. iii, p. 231, 232.

1076. III. *The Treatment* embraces all those remedies which are calculated to restore the general health: in the cases arising from loss of blood, and chlorosis, iron is the principal remedy; in the case of cachexia, sarsaparilla and cinchona are useful.

1077. The diet, the bowels, the exercise, and the hours, must be strictly regulated; change of air and the sea-breeze are extremely valuable.

1078. Should the various diuretics be added to the other remedies?

V. DROPSY FROM OBSTRUCTED VENOUS CIRCULATION.

1079. The principal examples of this kind of Dropsy are those which arise from—

I. *Disease of the Heart, or its Valves.*
II. *Disease of the Liver, especially Cirrhose.*
III. *Disease of the Spleen; Tumors, &c. within the Abdomen; Pregnancy, &c.*
IV. *Tumor in the Iliac region, or in the Axilla.*

1080. I. Dropsy from Disease of the Heart or its Valves is frequently very general, comprising hydrothorax, ascites, œdema of the lungs, anasarca of the extremities, &c.

1081. Dr. Wells, in the paper already quoted, § 1060, makes a distinction between Dropsy obviously arising from a disease within the thorax, and Dropsy not having such origin; and he concludes that "the greatness of the disease of the chest always lessens the probability of any great quantity of serum being found in the urine." p. 216.

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[1] Op. cit. p. 212.

1082. II. Dropsy from Disease of the Liver usually first assumes the form of *Ascites;* this may be *followed* by *Anasarca.*

1083. M. Andral observes[1] — "When Dropsy is the result of disease of the liver, the ascites almost constantly precedes the anasarca; in our cases (of Intermittent), on the contrary, the lower extremities were first affected with dropsy." M. Andral adds, that this fact seems to prove that disease of the liver is not the cause of Dropsy in intermittents; and he considers that disease of the spleen alone cannot be the cause of Dropsy.

1084. Sydenham observes that the principal "symptom" which accompanies intermittents in their decline is "a dropsy wherein the *legs first* swell and *then* the *abdomen*[2]."

1085. Dr. Wells observes[3]—"Dropsy is another well-known consequence of ague. Whenever I have observed dropsy of the abdomen to arise from this cause, which however has not been often, swellings of the lower extremities have always preceded it. Sir John Pringle remarks, that the dropsies, which occurred after ague in the Netherlands, generally began at the feet, and rose gradually to the belly;" he adds, "I have found, that in by far the greater number of instances of ascites, which occur now among the poor of London, the swelling of the belly precedes that of the skin;" and he concludes that this is owing to "the intemperance of the lower people with respect to spirituous liquors."

1086. This is an interesting question; for the same judicious author observes—"In fourteen cases of "(Ascites)," apparently not encysted, and in the histories of all of which I either have marked, that the swelling of the limbs had followed that of the abdomen, or have taken no notice of an external swelling, there was likewise no serum in the urine.

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[1] Clinique Médicale, ed. 1, t. i, p. 481.

[2] Op. cit. p. 63.

[3] Trans. of a Soc. for Imp. of Med. and Surg. Know. vol. iii, p. 527.

1087. " In seven cases, in other respects similar to the above mentioned fourteen, there was a very little serum in the urine.

1088. " But with respect to ascites, which is distinctly preceded by dropsy of the skin, the result of my observations has been very different. These have been made in eight cases, in seven of which the swelling of the abdomen had occurred under my own eyes, and in regard to the eighth, I had a history of what had happened, both from the patient himself, and from his physician, that leaves no doubt concerning it. In three of these cases the urine was made entirely solid by heat. In two others the quantity of serum in it was considerable, but still not sufficient to occasion an entire coagulation when heat was applied. In the remaining three the quantity was sometimes less considerable. It appears, therefore, that ascites, following dropsy of the skin, differs greatly from ascites which either precedes dropsy of the skin or is not accompanied by it[1]."

1089. III. The Dropsy arising from Enlarged Spleen, and other Tumors within the abdomen, from Pregnancy, &c. usually assumes the form of Anasarca. Does it arise from pressure upon the vena cava?

1090. IV. A tumor in the *Iliac* region has induced anasarca of the *corresponding* lower extremity; a tumor of the *Axilla*, that of the arm. In these cases the Dropsy is obviously owing to the impeded return of the venous blood.

VI. TOPICAL DROPSIES.

1091. I must make a brief allusion to the various forms of local Dropsy, and their several *causes:*

1092. 1. Hydrocephalus, Hydrothorax, Hydropericardium, Ascites, may be the simple effect of *Inflammation*, acute or chronic;

1093. 2. The same forms of Dropsy may be excited by the presence of *Tubercles* in these cavities severally, or may coincide with these.

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[1] Trans. of a Soc. for the Imp. of Med. and Surg. Know. vol. iii, p. 218.

1094. The presence of *Cirrhose* of the Liver, appears to induce ascites on the principle of *Irritation*, from contact with the adjacent peritonæum; in one most interesting case the same result occurred from the similar contact of an inflamed and enlarged *Ovarium*.

1095. The same principle may obtain in the dropsies of the *other Cavities*, and it appears not to have been sufficiently noticed by medical writers.

1096. How much still remains to be investigated in reference to Dropsy must be apparent from this sketch. It is a field, which, if diligently cultivated, would yield an abundant harvest. No one must enter upon it without first making himself intimately acquainted with the invaluable papers of Dr. Wells, so often quoted, and with the works of Dr. Blackall, Dr. Bright, Dr. Ayre, Dr. Osborne, &c.

1097. Before I conclude the subject of Dropsy, I must make a few observations upon *two* points of great importance, viz.—

I. *The state of the Urine*,
II. *The use of Diuretics*,

in reference to the various forms of this disease.

1098. According to Dr. Prout the *blood* consists of
Water,
Solid red particles, }
Fibrin, }
Albumen, }
From the similarity of their chemical properties, termed, by Berzelius, the *albuminous principles* of the blood.
Lactate of soda, and some peculiar animal matters, which, according to Berzelius, always accompany it.
Muriates of potash and soda.

All of which, except the red particles, and perhaps the fibrin, are held in a state of solution whilst circulating in the living body.

1099. According to Berzelius, 1000 parts of healthy *urine* consist of—

	Water	933·00
Animal and destructible principles.	Urea	30·10
	Lithic acid	1·00
	Pure lactic acid, lactate of ammonia, and animal matters not separable from these	17·14
	Mucus of the bladder	·33
Alkaline and earthy salts.	Sulphate of potash	3·71
	——— of soda	3·16
	Phosphate of soda	2·94
	——— of ammonia	1·65
	Muriate of soda	4·45
	——— of ammonia	1·50
	Earthy phosphates, with a trace of fluate of lime	1·00
	Silex	·03
		1000·00[1]

1100. "Besides these ingredients, which appear to be essential to *healthy* urine, this secretion in different *diseases* has been found to contain albumen, fibrin, and the red particles of the chyle and blood; nitric acid, benzoic acid, and the red particles of the chyle and blood; nitric acid, various acids formed from the lithic, oxalic acid, benzoic acid, and carbonic acid; xanthic oxide, cystic oxide, Prussian blue (?), sugar, bile, and pus.

1101. "*Albumen, fibrin, and the red particles*, which constitute the great bulk of the matters existing in the blood, are never met with in healthy urine; but in some varieties of Dropsy, and other dieases, the urine not only contains the serum of the blood, but the fibrin and red particles likewise pass through the kidneys unchanged[1]."

1102. Dr. Prout describes albuminous urine as being sometimes *chylous*, sometimes *serous;* as existing, occasionally, unconsciously to the patient, and without symptoms; sometimes with diuresis and a frequent desire to void the bladder.

1103. Dr. Wells concludes from his observations—1. that the exhibition of *mercury* is apt to induce albuminous urine[2]; 2. that albumen in large quantity in the urine is rare, except in *Dropsy;* 3. that "the presence of albumen in the urine seems to be independent of weakness. It would appear, on the contrary, from the full and frequent pulse which frequently accompanies it, to be connected with too great action in some part of the system[1]."

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[1] Inquiry into the Affections of the Urinary Organs, ed. 2, 1825, p. 2.

[2] Op. cit p. 230, 231.

1104. It will be sufficiently obvious from the preceding remarks, that the different Dropsies must be treated upon very different principles:—1. the *Inflammatory* and *Exanthematous* dropsies require the use of the lancet; 2. the dropsies from *Loss of Blood*, *Chlorosis*, *Cachexia*, *Debility*, &c. require chalybeates, bitters, sarsaparilla, &c.

1105. But it is usual, *in all*, to give diuretics of various kinds. It must, however, be evident that, in *Inflammatory* Dropsy, mercury, with digitalis, tobacco, &c. or the *debilitant* or *sedative* diuretics, would be proper; whilst in the Dropsy of *Exhaustion*, squills, spartium, juniper, the spiritus terebinthinæ, &c. or the *stimulant* diuretics, would be preferred.

1106. Several salts of potass, as the acetate, the bitartrate, the nitrate, are useful diuretics in *most* cases of Dropsy.

1107. In addition to the diuretics, I ought to mention certain purgative remedies, but especially the elaterium. By exciting the intestines, it excites the absorbents, just as diuretics do so by exciting the kidneys.

1108. There is one other remedy which should be noticed,—viz, *paracentesis*. This operation has been performed in chronic *hydrocephalus*, in *hydrothorax*, and *hydro-pericardium*, in *ascites*, in *hydrocele*, and, if I may so apply the term, in *anasarca*. The object is in all cases to withdraw the dropsical fluid. The presence of *inflammation* is a counter-indication to its use; the chronic character of the disease, urgent symptoms, as dyspnœa, are the motives which induce us to have recourse to this measure. If there be inflammation, and paracentesis be performed, the whole of the fluid should not be withdrawn—the inflamed membranes should not, for obvious reasons, be brought into contact. In the absence of inflammation, the full evacuation of the fluid is extremely desirable.

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[1] Op. cit. p. 213.

1109. I here terminate what I had to say on the diagnosis of *the Diseases of the General System.* My arrangements will not always bear severe scrutiny by the nosologist; but I am also persuaded that they will be of use to the young clinical student, or practitioner; and this object I esteem of greater value than the former. I now proceed to treat of the *Diseases of Individual Systems or Organs.*

II. OF DISEASES OF INDIVIDUAL SYSTEMS.

CHAPTER I.

ON THE DISEASES OF THE NERVOUS SYSTEM.

1110. Before I proceed to treat of the Diseases of the Nervous System, I must give a brief idea of the parts of which that system consists[1].

1111. I believe all recent anatomists have divided the Nervous System into the cerebro-spinal and the sympathetic. The first of these is represented in a plate by M. Manec: it consists, first, of the cerebrum as a centre; secondly, of *sentient* nerves, which pursue their course to it, and, thirdly, of *voluntary* nerves, which proceed from them, either along the base of the brain, or along the spinal marrow, and then along every external part of the animal frame. The second is partly represented in another plate by the same anatomist· it comprehends the internal ganglionic or sympathetic.

1112. To these two subdivisions of the Nervous System, I believe a third must be added, before our views of that system can be considered as at all complete;—it is one which

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[1] I am happy in being able to refer my reader, for further details, to my *Lectures on the Nervous System*, published in the spring of 1836.

I first published upon this subject a paper read to the Zoological Society, on November 27, 1832; and next, a paper read to the Royal Society, on June 20, 1833. In the latter year, and in 1834, M. Müller, the celebrated physiologist of Berlin, published in his "Handbuch der Physiologie," pp. 333—and 688, *similar* views, founded upon *similar* observations. This coincidence of opinion affords the best proof possible of their truth and importance; whilst the dates leave no doubt to whom the priority of publication belongs.

I claim the merit of first pointing out in all its fulness. Suppose the cerebrum, the *centre* of the first subdivision of the Nervous System, and the ganglionic, or the second subdivision of this system, removed, *this remains.* It consists of the *true* spinal marrow, distinguished from the sentient and voluntary nerves which run along its course, as an *axis* of *excitor* and *motor* nerves. It is the seat of a peculiar series of physiological phenomena, and of a peculiar class of pathological affections : in the former are included *all* the functions which relate to the immediate acts of *ingestion* and *egestion ;* to the latter, *all* spasmodic diseases.

1113. According to this view of the subject, instead of dividing the Nervous System into—

I. *The Cerebro-Spinal, and*
II. *The Ganglionic, or Sympathetic,*

I would propose to divide it into—

I. *The Cerebral, or the Sentient and Voluntary ;*
II. *The True Spinal, or the Excito-motory ; and*
III. *The Ganglionic, or the Nutrient, the Secretory, &c.*

1114. I must, in the first place, observe, that the designation, cerebro-spinal, is incorrect. It comprises *two* subdivisions of the Nervous System, which must be distinguished from each other, and of which the cerebrum and the true spinal marrow are the respective centre and axis.

1115. The first comprises every part of the Nervous System which relates to *sensation* and *volition*, the nerves of *sense*—the olfactory, the optic, the auditory, the gustatory, the nerves of touch, and the whole of the nerves of voluntary motion. Its centre is the cerebrum, including the cerebellum ; its sentient nerves run variously from the organs of sense, and from the *external* surfaces, first *without* the cranium or spine, and then *within* the cranium or spine, *to* that centre ; its voluntary nerves pursue a similar but retrograde course *from* that centre to the muscles of voluntary motion.

1116. A peculiar set of nerves constitute, with the true spinal marrow as their *axis*, the second subdivision of the

Nervous System. As those of the former subdivision were distinguished into sentient and voluntary, these may be distinguished into the *excitor* and *motory.* The first, or the excitor nerves, pursue their course principally from *internal* surfaces, characterized by peculiar excitabilities, *to* the true medulla oblongata and spinalis; the second, or the motor nerves, pursue a reflex course *from* that medulla to muscles having peculiar actions concerned principally in ingestion and egestion. The motions connected with the former, or cerebral subdivision, are sometimes, nay, frequently, *spontaneous;* those connected with the true spinal are, I believe, *always excited.*

1117. I think, too, that there is good reason for viewing the fifth and the posterior spinal nerves as constituting an external ganglionic system, for the nutrition, &c. of the external organs; so that I would further propose to subdivide the *ganglionic* subdivision of the Nervous System into, 1. the *internal* ganglionic, which includes that usually denominated the sympathetic, and probably filaments of the pneumogastric; and 2. the *external* ganglionic, which will embrace the fifth, and the posterior spinal nerves.

1118. To the *Cerebral* or *Sentio-voluntary* system, all diseases of *sensation, perception, judgment,* and *volition* belong, whether these functions are augmented, diminished, or annihilated,—and, therefore, all painful, mental, and comatose, and some paralytic, diseases. To the *true Spinal* or *excito-motory* system belong ALL *spasmodic,* and certain *paralytic* diseases. It must be observed, however, that these two parts of the Nervous System influence each other, both in health and disease, as they do both influence the ganglionic system.

1119. It was well known to the ancients, that disease in one hemisphere of the brain induces paralysis in the opposite side of the body.

1120. This fact has been confirmed by modern pathologists. It has been fully ascertained that disease confined to one hemisphere of the cerebrum, or of the cerebellum, and to one side of the mesial plane in the tuber annulare, constantly affects the *opposite* side,—whilst disease, confined to one of the lateral columns of the medulla oblongata and medulla spinalis, affects the *corresponding* side, of the muscular system. The encephalon has a *crossed effect;* the medulla a *direct effect.*

1121. It has been further ascertained that, in *experiments*, lesions of the encephalon induce *paralysis only*, whilst lesions of the medulla oblongata and spinalis induce *convulsion*, or *paralysis*, according to their severity. Hence it becomes an important question to determine the cause of convulsive affections in disease of the *encephalon:* to this question I shall particularly direct the reader's attention immediately.

1122. I need scarcely add, in this place, that in those cases in which hæmorrhagy occupies an extensive space, affecting both hemispheres of the cerebrum,—as in meningeal hæmorrhagy at the summit, or at the base of the brain, in extensive hæmorrhagy within the brain, extending from one hemisphere to the other, or in both ventricles,—*general* paralysis is observed; the same event takes place in the cases in which a clot is formed in the mesial line in the tuber annulare,—the nodus encephali, as it has been termed.

1123. Apoplexy and general paralysis are always serious. They are still more so when they affect the excito-motory system, inducing dysphagia, stertor, relaxed sphincters, &c.

1124. I must not, however, extend my observations on the cerebral system, but hasten to that in reference to which I particularly wish to engage the interest of the reader.

1125. The *first* remark I would make is a very comprehensive one. I believe that the *whole* order of spasmodic and convulsive diseases belongs to this, the excito-motory division of the Nervous System,—and that they cannot be understood without a previous accurate knowledge of this system!

1126. Another remark is equally important. *All* these diseases have their source in *one* of three parts of the excito-motory system: the *first* series have their origin in the spinal marrow itself, the axis or centre of the system; I shall designate these cases by the epithet *centric:* the *second* series have their source in the excitor nerves, consequently at a distance from that centre; I shall denominate them the *eccentric;* a *third* series occurs, like the spasmodic tic of the seventh pair, in the course of the motor nerves.

1127. A third remark is, that in *all*, or *almost all*, the order of spasmodic diseases, the parts most immediately concerned in ingestion and egestion,—the orifices and exits of the frame,—are those principally affected. The physiology has become pathology. The *larynx* is *closed* in the convulsions of children, in epilepsy, in puerperal convulsion; it is spasmodically affected in tetanus and hydrophobia; it is partially affected in the croup-like convulsion, in hysteria, in which there is frequently loss of voice, &c. The *pharynx* is affected in some of these diseases. The *respiratory* muscles are so in all. In epilepsy we observe affections of the *sphincters*, and even of the ejaculators.

1128. After these brief remarks, I will merely add an Arrangement of the Diseases of the Nervous System.

I. DISEASES OF THE CEREBRUM.
  I. *Encephalitis.*
  II. *Congestion and Hæmorrhagy.*
  III. *Tubercles; Tumors.*
  IV. *Hypertrophy; Atrophy.*
  V. *Mania.*

II. CEREBRAL DISEASES RESULTING FROM VARIOUS AFFECTIONS OF THE SYSTEM.
  I. *Intestinal Irritation.*
  II. *Exhaustion from Loss of Blood.*
  III. *Chlorosis.*
  IV. *Excessive Study; Shock; Alcohol; &c.*
    1. *Delirium Tremens.*
    2. *Delirium Traumaticum.*
  V. *Affections of the Kidney;*
    1. *Dropsy.*
    2. *Ischuria.*

III. DISEASES OF THE CEREBRAL NERVES.
  I. *Paralysis.*
    1. *Of the Sentient Nerves,*
    2. *Of the Voluntary Nerves.*

- II. *Augmented Action.*
  - 1. *Of the Sentient Nerves;*
    - 1. *Inflammation; Ulceration; Tumors; &c.*
    - 2. *Neuralgia.*
    - 3. *Hemicrania; Brow-ague, &c.*
  - 2. *Of the Voluntary Nerves; Spasm?*

- IV. DISEASES OF THE CEREBELLUM.
- V. DISEASES OF THE SPINAL MARROW.
  - I. *The Centric Diseases, or Diseases of the True Spinal Marrow itself.*
  - II. *The Eccentric Diseases, or Diseases excited through the Excitor Nerves.*
  - III. *The Diseases of the Motor Nerves.*
- VI. INFLAMMATION WITHIN THE SPINE.
  - I. *Inflammation of the Membranes, or Spinal Meningitis.*
  - II. *Inflammation of the Substance, or Spinal Myelitis.*
    - 1. *Of the Cerebral, or Sentient and Voluntary Tracts.*
    - 2. *Of the True Medulla.*
    - 3. *Of its Principal Divisions.*
- VII. CONGESTION; HÆMORRHAGY.
- VIII. CENTRIC CONVULSIONS OR EPILEPSY.
- IX. PARALYSIS AGITANS.
  - 1. *General; or*
  - 2. *Hemiplegic.*
- X. TREMOR MERCURIALIS.
- XI. THE ECCENTRIC DISEASES OF THE SPINAL MARROW.
  - I. *Eccentric Epilepsy.*
  - II. *Puerperal Convulsion.*
  - III. *Tetanus.*
  - IV. *Hydrophobia.*

XII. DISEASES OF THE SPINAL MOTOR NERVES.
- I. *Spasmodic Strabismus.*
- II. *Spasmodic Tic.*
- III. *Spasmodic Torticollis.*
- IV. *Spasm of the Respiratory Muscles.*

XIII. DISEASES OF THE GANGLIONIC NERVES.

I. OF ENCEPHALITIS.

1129. Encephalitis must be distinguished into—

1. *Inflammation of the Membranes,*
    1. *Of the Summit,*
    2. *Of the Ventricles,*
    3. *Of the Base, and*
2. *Inflammation of the Substance,*
    1. *Of the Principal Divisions of the Cerebrum.*
    2. *Of the Cerebellum.*

1130. The former of these might be distinguished by the term *meningitis*, the latter by that of *myelitis*.

1131. I. The *Causes* of Encephalitis are mechanical injuries of the head itself,—blows, falls, contre-coups; excessive mental application, anxiety, &c.; the intemperate use of spirits; exposure to the sun-beams; &c. Frequently, encephalitis forms a complication of other diseases of the system, or of distant organs, especially fevers, the exanthemata, and dropsies. It is also frequently the *effect* of other diseases of the encephalon itself; it is excited round the coagulum, or cyst, in cases of cerebral hæmorrhagy,—tumors, tubercles, &c.; it is also sometimes excited by ossifications, or projecting spiculæ of bone. Meningitis and myelitis frequently excite each other. M. Lallemand details a case in which a ligature applied to a part of the *right* brachial plexus induced inflammation and suppuration of the *posterior* part of the *left* hemisphere of the brain[1].

1132. Encephalitis is said to have followed the suppression of the catamenia and other discharges. Is it ever connected with rheumatism?

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[1] De l'Encéphale, t. i, p. 122; 226.

1133. II. The *Symptoms* of this disease first manifested, are affections of the *cerebral* functions; affections of the *true spinal* and of the *ganglionic* functions, follow in their turn. These symptoms vary much in the *first* and in the *later* stages of Encephalitis.

1134. The very *first* symptoms are affections of the sensibility: the earliest, the most important, sometimes the *only* symptom, is *pain*, or cephalalgia; this is variously situated, not always acute, sometimes excruciating. In addition to pain, there is frequently intolerance of the eye to light, of the ear to sound, and occasionally of the skin to touch; to these are added the sense of flashes of light, or of sudden noises.

1135. The *next* symptoms are affections of the mental faculties: sleeplessness, or disturbed sleep, restlessness, delirium—sometimes violent, moroseness, stupor, unwillingness to be disturbed.

1136. The *third* source of the symptoms is the volition: there are various voluntary motions, denoting either pain or delirium.

1137. Besides these affections of the voluntary movements, there are, in meningitis, spasmodic movements; and in myelitis spasmodic, alternating with, or followed by, paralytic affections, which strongly characterize these different forms of Encephalitis.

1138. The symptoms which belong to the *true spinal* system are very peculiar: the *first* of these is *vomiting;* this symptom should therefore never be neglected: the *second* is *strabismus;* the *third* is some decided *spasmodic*, or even *epileptic* attack.

1139. The symptoms which belong to the *ganglionic* system are more obscure: the pulse is frequent; the bowels are frequently constipated; but the secretions are little affected.

1140. Encephalitis is sometimes marked almost solely by violent delirium, and it is then the *phrenitis* of nosologists; sometimes an early, if not the first, symptom is convulsion; sometimes there is violent headache as the chief symptom.

In other cases this disease is insidious in the highest degree: the patient seems *idle*, perhaps is suspected of *feigning;* he will not move or speak; and there may be *no* other marked symptom! We ought to beware of these things, and to cultivate an independent spirit of observation.

1141. There is no symptom perfectly diagnostic of meningitis and myelitis. The former is more marked by acute pain, delirium, and convulsions; the latter by muscular contractions, alternating with or followed by paralysis.

1142. The second stage of Encephalitis is denoted by diminished sensibilities and mental faculties: the pain and delirium subside into insensibility, stupor, coma; the spasmodic into paralytic affections. There may be blindness, deafness; the pupils are generally incontractile on exposure to light.

1143. Eventually, the true spinal functions suffer: there is permanent strabismus, difficulty in deglutition, stertor, and other affections of the respiration; relaxation of the sphincters, &c. The pulse varies much in frequency. The bowels are apt to be constipated. The urine is often scanty.

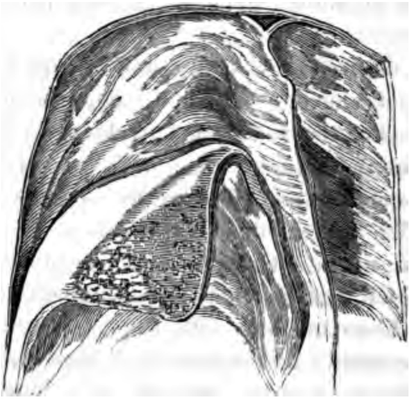
1144. The insensibility of the patient frequently leads to a particular event. He is unconscious of the existence of a disease, which, under other circumstances, would induce great pain. Complications with Encephalitis are, therefore, apt to be overlooked. One event I must point out in an especial manner: from insensibility, the patient does not void the bladder: this viscus becomes excessively distended, and there may be a stillicidium urinæ; in *every* case of insensibility, in *every* case of involuntary discharges of urine, we must examine the hypogastric region!

1145. There is another *practical* fact of much importance on which we must fix our attention: not only the dawn and the course of Encephalitis are insidious, but its termination is particularly so. In some cases an unexpected state of *sinking* takes place, in which the symptoms, whether pain or delirium, &c. subside, and the patient is thought to be convalescent. The same event occurs in some other diseases, especially enteritis. We must beware of this fact too, and suspect some such insidious change, unless *all* the symptoms concur to denote returning health.

1146. III. The principal *Morbid Appearances* left by Encephalitis are,

In Meningitis,	*In Myelitis,*
1. *Injection.*	1. *Injection; Tumefaction.*
2. *Effusion of Serum.*	2. *Softening.*
3. *Effusion of Lymph.*	3. *Purulent Infiltration.*
4. *Effusion of Pus.*	4. *Abscess, encysted, unencysted.*
5. *Ulceration.*	5. *Induration.*

The effusion of lymph upon the dura mater is represented in the following sketch from Dr. Baillie:



1147. These morbid appearances may take place in various parts of the encephalon. Those left by meningitis occupy the summit and the base of the brain, and the ventricles. Those induced by myelitis occupy the surface and the central parts, and any individual portion or portions of the substance of the brain.

1148. For further information upon these important points I refer my reader, with great satisfaction, to the works of M. Andral and Dr. Abercrombie. The only point to which I would draw attention particularly, is the fact that the inflamed brain is *tumefied*. This fact explains the occurrence of pressure and its varied effects on different parts of the encephalon, frequently situated remotely from the part affected by inflammation, softening, &c. It is on this principle that we explain the occurrence of various affections of the true spinal system in inflammation of different parts of the cerebral system,—the strabismus, the vomiting, the various convulsions which occur in the early stage; and the stertor, the relaxed sphincters, &c. which occur in the later stages of Encephalitis.

1149. IV. *The Treatment* of Encephalitis embraces, blood-letting, general and local, purgatives, antimonials, mercurials, cold lotions applied to the head, counter-irritation, &c.

1150. The efficacy and safety of blood-letting depend upon its prompt and effectual administration. I believe the *only* satisfactory mode of the institution of this important remedy is that which I have already pointed out in this work; see § 353. The patient is to be placed perfectly upright, looking upwards, and bled from a good orifice to *incipient syncope.* In this manner alone can we adapt the remedy to the nature and violence of the disease, and the strength of the patient. To *prescribe* a certain quantity of blood to be taken, is a dangerous, indolent, and unjustifiable proceeding, —for it is impossible to know, a priori, what that quantity should be.

1151. This mode of instituting blood-letting also guards us against some terrible mistakes, and yields an important diagnosis. There are some diseases *so similar* to Encephalitis, that the most experienced physicians cannot be absolutely certain what a given case may be. These cases would be brought to a fatal issue, if the same quantity of blood were withdrawn as is both proper and necessary in Encephalitis. If we adopt the rule for blood-letting which I have proposed, we shall be saved from the danger of inefficient blood-letting in the case of inflammation, and of undue blood-letting in the other cases, so similar to it in appearance, yet so different from it in reality! we shall also possess an accurate and important source of diagnosis. If it be inflammation, much blood will flow before the lip becomes pale; if it be of the other kind of disease to which I have alluded,—such, for example, as delirium tremens and certain congeneric affections,—very little blood will flow before that event occurs!

1152. Topical blood-letting is appropriate in cases in which some symptom or symptoms remain, and we dare not deplete the system further.

1153. Purgative medicines, especially the active purgatives,—as the oleum croton tiglii,—and nauseating doses of antimonials, are powerful auxiliaries to the other remedies.

1154. The free exhibition of mercury, so as to affect the system, is distinctly useful in continued inflammatory affections of some serous and mucous membranes;—as pleuritis, peritonitis, croup;—and they have been strongly recommended in Encephalitis. I had recently a very interesting case, in which a state approaching to dementia, from meningitis, was cured by a long-continued mercurial course.

1155. Ice, an alcoholic lotion, applied to the head, the cold water douche, &c. are other powerful auxiliary remedies. The same remark may be applied to blisters, issues, or setons, applied on some convenient part of the head or in the neck.

1156. It is important that the head should be raised; that the feet should be fomented and kept warm. It is important to prevent the patient's mind from being disturbed, or tried, in any way; to keep the eye from the light, the ear from noises, &c.

1157. I must in this place recall to your recollection the important remark made § 1055. The sudden attack of Encephalitis, or it may be pleuritis, or peritonitis, after scarlatina, or rubeola, is fatal, unless it be promptly met by blood-letting in the erect position, to incipient syncope; in effecting which, an extraordinary quantity of blood is withdrawn. I owe much that I know of this affection to my friend Dr. Heming.

II. ON CONGESTION AND HÆMORRHAGY IN THE ENCEPHALON.

1158. I now proceed to notice two diseases of the Encephalon, certainly not less important, not less frequent, than encephalitis. They are apoplexy and paralysis, or, more correctly,—

I. *Congestion without Rupture, and*
II. *Hæmorrhagy, or Rupture.*

1159. These affections, like encephalitis, may occur in—
I. *The Membranes,*
II. *The Substance, of the Brain.*

1160. I. The *Causes* of the attack of congestion or hæmorrhagy within the head, are predisposing and exciting: the former are plethora, repletion, or, on the contrary, exhaustion, inanition, or debility; disease of the heart, especially hypertrophy, and contracted valves, of the left side; some forms of acute anasarca; deranged or suppressed function of the kidney; disease of the arteries or veins, or other tissues within the cranium; &c. The exciting causes are excess in eating; muscular efforts, especially straining, vomiting, sneezing, passion; the recumbent posture, &c.

1161. II. As inflammation usually assumes an *acute* character, congestion and hæmorrhagy are, as generally, *sudden* in their attack. There are frequently, however, certain *antecedent Symptoms*, which denote the *threatening* of this attack, and which I shall take great pains to point out.

1162. I would observe, too, that these antecedent symptoms can only be observed and learnt,—like those of many other diseases,—in *private* practice,—I had almost said, in the cases of the rich and affluent; by which I mean that it is in *such* cases that we are compelled, from our very office, to remain by the patient, watching, anxiously watching, every shade of change.

1163. These antecedent symptoms consist of headache, vertigo; a sense of pressure, a sense of confusion; incoherence, delirium; loss of consciousness, of memory; drowsiness; numbness, paralysis, spasm; giddiness, flashes of light, visual spectra, noises; pallor, sickness, vomiting; faintishness &c.

1164. These symptoms are all *cerebral*, with the exception of the vomiting and of the spasm. The relation of the former of these to affection of the head, has been already pointed out; but it cannot be insisted on too much. A fall on the head, inflammation, and other diseases of the Encephalon, so frequently induce vomiting, as to make it a most valuable premonitory symptom in these cases.

1165. The *attack* of congestion, or of hæmorrhagy itself, is frequently of the most sudden kind. There is a total loss of sense and volition; the patient is flushed, comatose, breathes with stertor, and the pulse is strong and full. This is probably the case of congestion. In the attack of considerable hæmorrhagy, there are the symptoms of *shock* inflicted upon the nervous system: pain of the head is followed by paleness, sickness, and vomiting, and fainting; coma, or paralysis, loss of speech, or of the power of swallowing, succeeds immediately or more slowly, probably according to the promptitude or the extent of the hæmorrhagy. In the attack of partial hæmorrhagy, these symptoms are observed in a slighter form; and it is some paralysis, hemiplegia, partial loss of speech, &c. which ensues. In one interesting case, such an attack as I have last described was followed in a few months by one of severer form, and the patient survived but a few days.

1166. M. Lallemand observes—" In fine, in inflammation of the arachnoid, there are *spasmodic* symptoms without paralysis; in hæmorrhagy, *sudden paralysis* without spasmodic symptoms; in inflammation of the substance of the brain, *spasmodic* symptoms, and *slow and progressive paralysis*[1]."

1167. It will be perceived that in these cases the true spinal system is affected in proportion to their gravity. To the loss of sense and voluntary motion are now added, dysphagia, stertor, and relaxed sphincters; sometimes there are convulsions, sometimes contraction of the limbs; in other cases, as I have stated, sickness and vomiting.

1168. The ganglionic system suffers in its turn: the bronchia and trachea become clogged with mucus.

1169. III. The *Morbid Anatomy.*—The injection of inflammation is probably seated in the minute *arteries* and the capillaries, whilst the morbid anatomy, in these cases, consists in congestion or rupture of the minute *veins* and capillaries, of the medullary substance.

1170. M. Serres speaks of a meningeal apoplexy; M Cruveilhier depicts an " apoplexie capillaire" of the substance of the brain:

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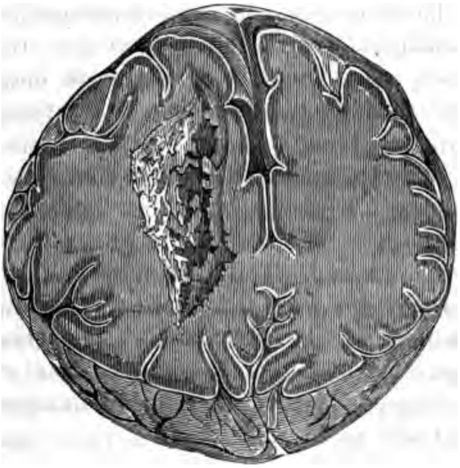
[1] Recherches sur l'Encephale, t. i, p. 278.

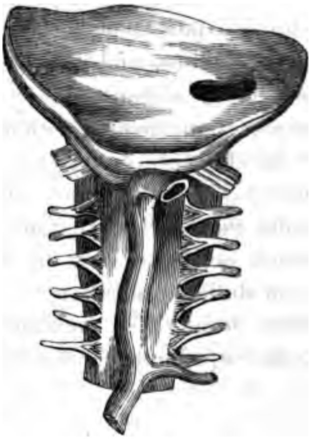
1171. The meningeal rupture is both described and depicted by the late Dr. Cheyne[1], and by M. Serres[2];

1172. The congestion of the substance of the brain is readily understood. It is not always obvious on post-mortem examination.

1173. Rupture may occur in any part, and even different parts of the brain, at once, or consecutively, and to any extent. In the subjoined sketch from Dr. Baillie, it is represented as occupying the hemisphere:



In this sketch from M. Ollivier it occupies one side of the tuber annulare:



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[1] Cases of Apoplexy and Lethargy, 1812, p. 216, pl. III.

[2] Annuaire des Hôpitaux, 1819, p. 309, pl. XI.

It produces corresponding and proportionate effects,—paralysis, partial, in the former case, or general, in the latter, and coma, in their various forms and degrees.

1174. Diffused meningeal apoplexy; extreme hæmorrhagic effusion into the substance, or into the ventricles of the brain, induce general paralysis, or coma; partial hæmorrhagy of a hemisphere, paralysis of the opposite side of the body; still more partial and circumscribed hæmorrhagy may affect the arm, or the leg only, or the speech.

1175. The appearance of cerebral hæmorrhagy is very different at different periods after its occurrence. At first there is a mere coagulum of blood of various dimensions and form; afterwards, the colouring matter disappears, and fibrine or serum remains, enclosed in a cyst lined with a fine membrane like the serous membranes; in some cases the sides of this cyst gradually approach each other, and remain in simple contact, or unite. The contents of the cyst sometimes become organized. The parts of the brain surrounding the hæmorrhagy are frequently softened, sometimes as the cause, sometimes as the *effect*, of the hæmorrhagy; in old cases they are much indurated. The adjacent arteries are frequently diseased,—beset with calculous or osseous matter, —or affected with aneurysm[1].

1176. The treatment of congestion and hæmorrhagy of the Encephalon embraces the use of blood-letting, general and local, purgative medicines, the most rigid abstinence, &c.

1177. The principal point which I wish to impress upon the mind in reference to blood-letting, is its different measure proper in mere *congestion* and actual *rupture*. In the former there is extreme tolerance of loss of blood; in the latter, the system is extremely, and even dangerously, susceptible of this loss. The diagnosis is frequently difficult. I have pointed out the most distinctive symptoms, § 1165. In addition to an attention to these, I must again impress the mind with the importance of placing the patient in the perfectly upright posture before the blood is allowed to flow: we must watch his countenance, his breathing; keep our finger on his pulse; and the moment the slightest indication of approaching syncope takes place, arrest the flow of blood and place the patient recumbent.

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[1] See Blane, Trans. of a Soc. for the Imp. of Med. Know. vol. ii, p. 193; Serres, Archives de Méd. t. x, p. 419; &c.

1178. If early syncope occur, we must trust the future to local depletion by means of cupping at the occiput and the neck. If the patient lose a large quantity of blood without change, we must pursue and repeat the remedy boldly; his life depends upon ample depletion of the sanguiferous system. We must add, to the energetic use of the lancet, that of the cupping instrument.

1179. The head should be covered with a spirit lotion. The feet should be fomented, involved in ample bran poultices and sinapisms alternately.

1180. The bowels must be purged freely, daily.

1181. The diet must be mere barley-water.

1182. The countenance, the respiration, the pulse, must, however, be watched, and the least disposition to debility cautiously noticed and remedied,—even by stimulants, and especially by the carbonas ammoniæ.

1183. The next questions relate to the treatment of the paralysis, should the patient survive, or escape the attack of apoplexy. I must suppose all inflammatory action dissipated. In this case liniments and electricity may be tried, but especially voluntary movements of the limb. Is strychnine ever of advantage?

1184. Should not we rather be still contemplating the condition of the brain, and using the remedies proper for the cerebral disease, the source of the paralysis? Cupping, so as to induce irritation, rather than to withdraw blood, setons, issues, near the part affected,—that is, upon the hemisphere opposite to the paralysed side,—are our principal remedies, but especially the first of these.

III. TUBERCLES OF THE ENCEPHALON.

1185. Besides the diseases which I have hitherto mentioned, there are others which may occur in the Encephalon. These are Tubercles and various kinds of Tumors.

1186. As inflammation, congestion, and rupture constitute the acute and sudden affections of the brain; tubercles and tumors present us with slow and gradually progressive diseases of this organ. Not that this rule is without exception: for inflammation is sometimes slow and insidious in its accession; whilst tumors occasionally produce the sudden attack of an apoplexy.

1187. The difference between the same encroachment upon the cavity or contents of the cranium, formed promptly, or with extreme slowness, is enormous. Large tumors, slowly formed, may exist within the scull almost without a symptom; a clot of blood of the size of a pea, or certainly of a nut, in the substance of the brain, may produce hemiplegia!

1188. In speaking of the tubercles of brain, I must allude to the important law discovered by M. Louis, in regard to tubercles—that, beyond the age of fifteen, tubercles are never found in *any organ* of the body without being present in the *lungs?* In a doubtful case, then, we examine the condition of the thorax: if there be tubercles there, it is a presumption that there may be tubercles in the Encephalon: if there be no sign of pulmonary tubercle, it is a presumption that the affection of the brain is not tuberculous. But, as pulmonary tubercles are not always easily detectible, we endeavour to ascertain, in the absence of signs, whether there be other reasons for suspecting tuberculous formation, —such as an hereditary strumous or tuberculous affection in the system, or in any organ, &c.

1189. Otherwise the symptoms of tuberculous affection of the brain do not differ from those of slow inflammation.

1190. Tubercles occur principally in the cortical and medullary substance of the upper part of the hemispheres: but also in the cerebellum, tuber annulare, medulla oblongata and spinalis; and in the peduncles, the corporas triata, and the thalami. They vary from the size of a millet seed to that of a pea or of an egg. They sometimes become encysted, especially as softening takes place. They frequently excite increased and inflammatory action in the adjacent portions of the nervous mass—whence the symptoms.

IV. TUMORS OF THE ENCEPHALON.

1191. Tumors, and especially the scirrhous and encephaloid, may exist within the cranium. They have occasionally followed blows on the head; they frequently co-exist with similar affections in other organs of the body.

1192. Developed slowly, they may exist with scarcely any symptom, or they may induce symptoms, on the principle, 1, of compression; 2, of irritation; and 3, of inflammatory action in the adjacent parts, 1. of the brain, 2. of the nerves, 3. of the membranes, and 4. of the cranium itself. These symptoms are frequently induced gradually, sometimes suddenly; and are varied with the part principally affected. They consist of pain, followed perhaps by stupor; loss of smell, sight, touch, hearing, or taste; paralysis; or various convulsive affections, as strabismus, and even *epilepsy*.

V. HYPERTROPHY OF THE BRAIN.

1193. This disease has been only recently distinguished from other diseases of the Encephalon. We owe our knowledge of it principally to MM. Bouillaud[1], Dance[2], Scoutetten[3], and Andral[4]. It has sometimes occurred in children; but most frequently between the ages of twenty and thirty.

1194. The brain is at once larger and paler than natural. In this latter particular it differs from inflammation or congestion, in which there is also a degree of tumefaction. On opening the cranium, the dura mater seems ready to burst; on removing this membrane, the convolutions of the brain are found to be so firmly pressed together that the intervening triangular spaces have disappeared.

1195. The symptoms are those induced by compression: after long-continued pain, loss of intelligence and muscular power; convulsions; epilepsy.

1196. In one case only were these symptoms absent. It was the case of M. Scoutetten, which occurred in a little child aged five, in whom the cranium grew, pari passu, with the augmented size of the brain.

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[1] Traité de l'Encéphalite. [2] Repertoire d'Anatomie Pathologique, 1828.

[3] Archives Générales de Médecine, t. i, et t. ii.

[4] Clinique Médicale, t. v, p. 595.

VI. ATROPHY OF THE BRAIN.

1197. I have, in this place, simply to notice a fact which should not be unknown, that the brain sometimes becomes atrophied in some part, especially of the convolutions, in the latter, or latest, periods of life. Dementia and paralysis are the effects of this singular malady. Frequently the patient becomes utterly helpless, and passes into *second childhood*, as it is termed, and the evacuations pass involuntarily.

1198. Sometimes the convolutions are simply reduced in volume; at other times they are puckered; in other cases there is induration.

1199. The patient lives a life of a mere excito-motory and nutritive kind. The cerebral functions are obliterated. The true spinal and ganglionic functions remain alone.

1200. There is much for the physiologist and pathologist to investigate in this singular *return* to a sort of infantile existence.

VII. OF MANIA.

1201. There is still much obscurity in our views of this sad, but interesting subject.

1202. I. The most important consideration in regard to the *Causes* of mania, is, undoubtedly, hereditary predisposition.

1203. The most powerful exciting cause is mental harass: the arduous duties of our prime ministers, the anxieties of the stock-exchange, have frequently led to mania in its worst forms. Another set of causes of mania are the circumstances involved in the parturient and puerperal states, whether these be shock of the system, intestinal irritation, the loss of blood, the establishment of lactation, the condition of the uterine system, &c. I have had the most unequivocal evidence of the influence of loss of blood in inducing mania under other circumstances. For a case of this kind I may refer to the Medical Gazette, vol. ix, p. 421. Protracted lactation is also an undoubted cause of mania. A very morbid condition of the bowels also, indubitably leads to mental derangement: hence the term melancholia (μέλαινα χολὴ, *black bile, or choler.*)

1204. II. *The Symptoms.* Mania assumes various forms: it is sometimes attended by an expression of the eye and of the countenance, a manner, a demeanour, a loquacity, which denote the utmost excitement; in other cases it is moping *melancholy*, with a corresponding attitude and taciturnity; in a third instance there is *monomaniacal* (μόνος, *alone*, μανία, *madness*,) disposition to suicide or homicide; in a fourth patient we may have *nymphomania* (νὺμφη, *nympha*).

1205. The first symptom is frequently wakefulness: we should never neglect this symptom; it is so frequently the prelude to inflammatory or maniacal affections, that it should always be treated with extreme attention.

1206. Then some incoherent idea is expressed: love is changed into hatred; friends are viewed as enemies; prosperity as ruin; there are suspicions of a thousand kinds: despondency, or absolute despair; &c.

1207. Some such expression will excite your attention to the impending evil, and then you will proceed to ascertain its particular cause or causes, its form, &c.

1208. III. An important question is that which relates to the *Morbid Anatomy:* is this *cause* or *effect* of the mania? That it is frequently the effect, and that it has been too exclusively regarded as the cause, I can scarcely doubt. The appearances are usually deposits of serum and of lymph between the arachnoid and pia mater; sometimes effusion into the ventricles, sometimes injection of the cortical substance.

1209. In protracted cases these effects may be more considerable still, and lead to dementia, general paralysis, &c. We may consult M. Calmeil's interesting volume upon this subject.

1210. If encephalitis is the frequent effect of mental harass and effort, why may not these appearances be the effect of the maniacal state?

1211. This question is an important one. If the view at which I venture to hint,—if mania be the *cause* of the morbid appearances,—our hopes are excited; if it be the *effect*, our fears are confirmed. Indeed, I have always observed that certain facts, such as the inveteracy of the case, a peculiar effect on the countenance, the manner, &c. lead to the formation of an unfavourable prognosis; and, I believe, because they denote the *supervention* of morbid changes in the Encephalon.

1212. According to MM. Delaye and Foville, the *cortical* substance is principally affected in Mania: there is injection, with a red or deep brown colour, either generally, or here and there, and with softness, so that portions of the brain are raised with the membranes when these are detached; the membranes are opaque and covered with serum, lymph, or pus; the bones are found, in some cases, thickened and hardened.

1213. MM. Bouchet and Cazauvieilh[1] agree with MM. Delaye and Foville, in their opinion of the organic origin of Mania; and add the important remark, that, as Mania consists in acute or chronic inflammation seated in the cortical substance, epilepsy consists of chronic inflammation of the white or medullary part of the brain.

1214. *Dementia* and *Lethargy*, which offer no difficulty in the diagnosis, seem alike to arise from the effects of chronic inflammation, and probably differ only in the *seat* of the morbid lesion: in the former, the effusion being chiefly within the ventricles of the brain; in the latter, upon its surface.

1215. IV. Why is the *moral Treatment* so important? It is surely because it diminishes the violence of the maniacal condition, and so obviates its tendency to produce such morbid changes of structure, with its consequent hopelessness.

1216. Why is it so important to procure quiet, composed sleep? Obviously for the same reason. Sleeplessness, like mental effort, and the maniacal paroxysm, may induce morbid actions in the Encephalon, and these may lead to morbid changes.

1217. The evidence from the morbid anatomy is quite deficient for practical purposes, unless we are enabled thus to distinguish cause and effect; and I fear this point has not been sufficiently considered by those who have addicted themselves to this department of medical science. It is sad to observe how a little effusion, a slight layer of lymph, is the *cause* of every thing, in the minds of some of these gentlemen of one idea.

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[1] De l'Epilepsie, &c. p. 45.

II. CEREBRAL DISEASES RESULTING FROM VARIOUS AFFECTIONS OF THE SYSTEM.

1218. I NOW wish to draw my reader's attention to a series of morbid affections which result from peculiar affections of the general system, or of various organs. They have been too much neglected by writers on Diseases of the Encephalon. These are—

I. *Intestinal Irritation.*
II. *Exhaustion from Loss of Blood.*
III. *Chlorosis.*
IV. *Excessive Study; Shock; Alcohol; &c.*
  I. *Delirium Tremens.*
  II. *Delirium Traumaticum.*
V. *Affections of the Kidney;*
  I. *Dropsy.*
  II. *Ischuria.*

1219. Several of these affections are not seen in hospitals; as it is in private practice only that we become acquainted with them. They are almost neglected by writers on diseases of the brain. Yet it is impossible that we can be prepared for practice without a due knowledge of these diseases.

I. INTESTINAL IRRITATION.

1220. The first of these affections consists of the irritation of indigestible food[1], scybala, or other morbid contents of the stomach or bowels, excited into activity by some shock of the system or of the nervous system, such as a fall or other accident; parturition; &c.

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[1] See a paper by the late Dr. J. Clarke, in the Trans. of the College of Physicians, vol. v, p. 109.

1221. The symptoms are, rigor, frequently severe heat of surface, and violent pain of the head, and intolerance of light and of sound; the symptoms, in a word, of the most acute encephalitis!

1222. The breath is tainted, the tongue loaded and swollen, the secretions morbid; but it would still be difficult to establish a distinct and confident diagnosis without the criterion afforded by the effect of blood-letting in the erect posture, of which I shall speak presently.

1223. The first step to be taken, in a doubtful case, is very slowly to administer an enema of from three to three and a half pints of warm water,—and to examine the state of the fæces, and to observe the effect upon the disease and upon the system. If there be scybala; if the symptoms be subdued; and especially if there be faintishness; the case is indubitably, not cerebral inflammation, but intestinal irritation.

1224. If the case still remain doubtful, the arm should be prepared, a vein opened, the patient placed upright, and the blood allowed to flow until the lips become pallid: if the case be encephalitis, an extreme quantity of blood will flow, even thirty or forty ounces, or more, before there is any appearance of syncope; if it be intestinal irritation, syncope occurs before one-fourth of that quantity of blood has left the circulating system!

1225. I have insisted so much upon the importance of a knowledge of this disease, and upon the nature of this diagnostic and guard against the undue and inefficient blood-letting, in several works[1], that I shall merely refer my reader to them for further information, which it would occupy me too long to repeat on this occasion.

1226. This affection sometimes assumes a far less acute form. I met with such a case very recently. It had been mistaken for encephalitis. The patient slowly but perfectly recovered from attacks of vertigo, &c. by maintaining a regular state of the bowels, diet, rest, and afterwards of gentle exercises, change of air, &c.

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[1] Commentaries on the Diseases of Females; Researches on Blood-letting, &c.

II. EXHAUSTION FROM LOSS OF BLOOD.

1227. I must refer my readers to the same works for information on this important subject.

1228. Throbbing; pain of some part of the head; a sense of pressure, as of an iron nail, of an iron hoop; intolerance of sound, of disturbance; sleeplessness; a state bordering on delirium; actual delirium, or even mania; some convulsive affection, perhaps epilepsy itself; are the affections which most frequently result from loss of blood.

1229. In other cases there are amaurosis; deafness; paralysis; a state of dozing; or slight coma,—the apoplexia ab inanitione.

1230. There are some observations upon this subject in a recent volume of the Medico-Chirurgical Transactions[1], by Sir B. Brodie: sometimes after an injury of the head, it becomes doubtful whether the symptoms depended upon the original accident or upon the treatment. The plan was changed and the patient recovered. In the Medical Gazette[2] there is an interesting case of *amaurosis* from loss of blood, by Professor Badham of Glasgow, occurring in his own daughter. I believe there was much obscurity in the case until the Professor was shewn my work upon the effects of loss of blood.

1231. I have known such cases treated upon antiphlogistic principles until there was the most imminent danger, when a change of plan has immediately induced a favorable change, and eventually restored the patient!

1232. Gentle stimulants, such as small quantities of brandy, the carbonate of ammonia; chalybeates; and a mild animal diet, are the principal remedies in such cases.

1233. I will conclude these brief remarks by observing that the first series of symptoms are entirely cerebral; those observed late in the disease conjoin with cerebral symptoms, symptoms which belong to the true spinal system; the half-closed eye-lid, a degree of stertor, an uncertain state of the sphincters, convulsions, are of this character. Eventually, in the very last stage, the ganglionic system suffers: mucus accumulates in the bronchia, and serum in the air-cells and cellular substance of the lungs; and flatus distends the intestines.

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[1] Vol. xiv, p. 382.

[2] Vol. xvi, 1835, p. 582.

1234. After death, effusion is found to have taken place under the arachnoid at the surface and base of the brain, and into the ventricles; there is œdema of the lungs, the intestine, &c.

III. ON CHLOROSIS.

1235. The influence of the state of bloodlessness which occurs in Chlorosis, upon the encephalon, has not been duly noticed by practical writers. I have already treated fully of this subject in reference to Chlorosis, § 938—955.

IV. OF SHOCK, MENTAL AND PHYSICAL.

1236. The immediate result of Shock on the general system, but especially on the cerebral system, is of the most interesting character.

1237. The influence of *mental* Shock is frequently a state bordering on delirium or mania. Suicide is a frequent event at such a moment. There are a sense of weight or pain about the head, and sleeplessness. There is great danger of mistaking the symptoms for mere mental affliction. We ought to *treat* it as a serious malady. The timely use of the lancet would have prevented many an act of suicide! But I will illustrate this point by a most interesting case.

1238. A. B——, aged forty, became ruined in character and fortune, and, when in the midst of his difficulties, experienced a sense of heaviness and pressure in the head, and passed sleepless nights. After several days he attempted suicide by dividing the muscles and blood-vessels of the arm deeply. He lost a large quantity of blood and became faint. On recovering from this state, he said to his medical friend—"had you bled me a few days ago, I should not have done this act; my feelings are altered, and I regard suicide with abhorrence; had Sir Samuel Romilly been timely bled, he had still been alive!" From this time all the symptoms subsided.

1239. To the same *class* of affections, doubtless, belongs the nervous delirium, or *delirium traumaticum*, described by Dupuytren as following serious accidents and operations.

1240. There are sleeplessness, delirium, jactitation ; the eyes are injected, the countenance flushed and animated, the forehead covered with profuse perspiration ; the patient is insensible to the pain of his accident or operation. There is no fever or constipation.

1241. This affection is frequent after attempts at suicide.

1242. The patient may fall asleep ; awake composed and rational ; relapse, &c. It is a short mania of five or six days. It is attended by great danger.

1243. There are no distinct traces of morbid change on examination. The brain and spinal marrow are found apparently healthy.

1244. The remedy recommended by Dupuytren is a small enema with five or six drops of tinctura opii, repeated three or four times, at intervals of six hours.

V. THE EFFECTS OF ALCOHOL.

1245. The preceding cases are obviously allied to *Delirium Tremens*, the result of drinking spirituous liquors. In this case there are wakefulness, delirium, and tremor, singularly combined.

1246. I. The *Symptoms* of delirium tremens may occur during the habit of taking alcoholic liquors ; or immediately after the wonted stimulus is withdrawn.

1247. The first symptom is tremor ; this leads to sleeplessness ; and this to delirium. The delirium frequently consists in the imagined presence of objects which the patient is anxious to seize or to avoid. The tongue is white ; the breath tainted ; the surface moist ; the pulse becomes frequent.

1248. In the advanced stage, the delirium may be replaced by coma, the tremor pass into subsultus tendinum, the evacuations become involuntary.

1249. The attack of delirium tremens is very apt to recur. The first attack is rarely fatal ; but a second attack may terminate unfavorably.

1250. II. The *Morbid Appearances* observed,—usually after second attacks,—are the effusion of serum into the ventricles, and of serum, and even of lymph, under the arachnoid.

1251. III. *The Treatment.* I have known free blood-letting induce a degree of sinking, both in young and old, from which no means could restore the patient. Opium, with a strict attention to the diet, and the secretions, constitutes the most efficacious remedy. It becomes a serious question whether any stimuli should be allowed.

1252. There is an interesting fact in the Précis d'Anatomie Pathologique of M. Andral, t. ii, p. 770, illustrative of this latter question. A drunkard is cast into prison and put upon prison diet: becomes affected with delirium; is allowed a certain portion of spirit and water; and immediately recovers.

1253. The three cerebral affections which I have thus briefly noticed, highly merit our best attention. I now pass on to two others, of a very different character. The first of these is a cerebral affection, which is apt to occur in the course of some

VI. DROPSIES.

1254. Dr. Wells, of St. Thomas's Hospital, was amongst the first to draw the attention of the profession to the frequent presence of albumen in the urine of patients affected with dropsies, preceded or unpreceded by scarlatina, in two most admirable papers published in the Transactions of a Society for promoting Medical and Surgical Knowledge; v. iii, p. 167 and p. 194. Dr. Wells' observations have been amply confirmed by Dr. Blackall, Dr. Bright, &c.

1255. In the midst of such a disease, the patient is not unfrequently attacked with symptoms denoting a cerebral or true spinal affection. There are delirium or coma; or convulsions;—apoplexy or meningitis.

1256. I have particularly noticed such an affection in children, in exanthematous dropsy. Dr. Wells mentions this affection, p. 177; Dr. Bright gives such a case in his Medical Reports, v. i, p. 97; there was, in this last case, "a slight serous effusion under the arachnoid." The subject is in need of renewed investigation.

VII. ISCHURIA.

1257. The next disease to which I must refer as intimately connected with the brain, is Ischuria, or suppression of the urine, to which may be added other morbid conditions of this secretion, besides that marked by the presence of albumen. Dr. Prout[1], Dr. Abercrombie[2], and Dr. Wilson[3], have lately treated this subject.

1258. There is frequently considerable disease of the kidneys. The suppression may be partial or complete. It leads to fever; thirst; a urinous taste in the mouth, and smell of the perspiration ; nausea, vomiting, hiccough ; delirium, coma, convulsions.

1259. It was necessary that I should enter into these brief details. Otherwise this *sketch* of my subject would have been incomplete. When the whole outline is filled up, I flatter myself that it will present a work of great *practical* as well as scientific interest; and I trust that I shall be enabled to accomplish this, in another work, before many years have passed away. I now proceed to give some account of the morbid affections of the cerebral nerves.

III. ON THE DISEASES OF THE CEREBRAL NERVES.

I. PARALYSIS.

1. *Of the Sentient Nerves.*

1260. In an interesting case of a tumor, found at the anterior part of the base of the brain, the *olfactory* and *optic* nerves were destroyed, and with them the sense of smell and of vision.

1261. The *optic* nerve may be subjected to compression or disease in any part of its course, from its origin to its termination in the retina itself. In one case, a partial loss of vision coincided with strabismus, the defective eye being drawn inwards. In another, there were, at the same time, defective vision and a spasmodic affection of the *seventh* of the same.

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[1] On the Urinary Organs; ed. 2, p. 303.

[2] The Edinb. Med. and Surg. Journ. v. xvii, 1821, p. 210.

[3] The Medical Gazette, v. xi, 1833, p. 777.

1262. Amaurosis may occur in affections of the brain. It is frequent in hydrocephalus; rare in paralysis. It occurs, as I have already stated, § 1230, from extreme loss of blood.

1263. I shall shortly advert to the difference between the case of paralysis of sensation of the face in hemiplegia, or from division of the *fifth* in a part of its course *exterior* to the cranium, and that arising from the division or disorganization of this nerve *within* the cranium; see § 1273. In the first two cases the eye is unaffected; in the last, this organ gradually perishes,—as I imagine, from the destruction of its ganglionic or nutritive nerve.

1264. This extraordinary fact was first ascertained by M. Magendie[1], in experiments; it was then observed in the human subject by M. Serres[2]. It has since been witnessed by Dr. Alison[3], Mr. Stanley[4], and other observers.

1265. In M. Serres' case, the right eye and the right nostril were insensible; the left sensible; the gums scorbutic. On examination, the origin of the *fifth* pair of nerves, on the right side of the tuber annulare, was found diseased.

1266. Dr. Abercrombie observes—" A remarkable circumstance connected with the affections of the fifth nerve, is the tendency to inflammation and sloughing in parts which have lost their sensibility,—particularly in the eye. A very instructive case of this kind occurred to my friend Dr. Alison. The patient had loss of common sensation of the left side of the face, the left nostril, and the left side of the tongue, with insensibility of the ball of the eye, and occasional bloody discharge from the left nostril; and was liable to attacks of pain, occasionally accompanied with fever, during which the pain was chiefly referred to the insensible parts. There were frequently attacks of inflammation of the left eye, with dimness of the cornea, which were relieved from time to time by the usual antiphlogistic means; but at the end of two months, a line formed round the base of the cornea, which at length sloughed out, and the contents of the eye were entirely discharged. The muscles of the left side of the jaw were paralytic, and felt quite flaccid when the patient chewed or clenched the jaws; but the motion of the muscles of the cheek was unimpaired. After the destruction of the eye, the paralytic symptoms remained stationary for a year or more; there was then a violent return of headache, with fever, and death in a state of coma after an illness of a fortnight. On inspection, there was found considerable ramollissement of some of the central parts of the brain. The fifth nerve of the left side, on being traced backwards from the ganglion, was found, close to the ganglion, to be of a very dense texture, but beyond this it was much wasted, and at its junction with the tuber annulare, nothing but the membrane seemed to remain. In another case of Dr. Alison's, there was loss of sensation of the left side of the face, followed by inflammation and sloughing of the eye-ball; after which, the sensibility of the parts returned. The patient was, before the appearance of these symptoms, and has since continued, liable to severe headache and epileptic fits. The loss of sensibility continued about six months.

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[1] Journal de Physiologie, t. iv, p. 176. [2] Anatomie du Cerveau, t. ii, p. 67.

[3] Abercrombie on Diseases of the Brain, ed. 3, p. 424. [4] Ibid. p. 425.

1267. " A remarkable combination of symptoms occurred in a case related by Mr. Stanley[1]. There was hemiplegia of the left side, without loss of sensation in the arm and leg, but in the left side of the face both sensation and motion were entirely lost. In the left side of the tongue, sensation was lost, but motion remained. The mucous membrane of the left nostril was always of a deep red colour, and there were frequent discharges of blood from it. The conjunctiva of the left eye became deeply injected; this was followed by opacity and ulceration of the cornea, and at last by total disorganization of the eye. There was total loss of hearing in the left ear. There were frequent attacks of erysipelas, which were entirely confined to the paralytic parts of the face. The patient had been long affected with headache, and at last died, two months after the commencement of the paralytic symptoms. A tumor was found in the left side of the tuber annulare, which compressed the origin of the fifth and seventh nerves against the base of the skull. The tumor was of the size of a walnut, of a firm consistence, and brown colour, and extended into the left crus cerebelli."

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[1] Med. Gazette, vol. i.

1268. Paralysis of the *fifth* pair, in its exterior course, was first distinctly pointed out by Sig. Bellingeri[1], in Italy, and afterwards by Sir Charles Bell and Mr. Shaw[2], in this country. The former of these writers has published a case, in his Dissertatio Inauguralis, 1818, of paralysis, I think, of the *fifth* and of the *seventh* nerves. The precise nature of the case is not, however, certainly known, the patient having happily recovered.

1269. The most interesting case of this kind, which it has ever been my lot to witness, was that of Ruth Peters, aged sixty, who was repeatedly seen by my pupils during the last session: this person was taken with pain of the right temple, deafness of the right ear, partial paralysis of motion and of sensation on the right side of the face—the right eyelid being only slightly depressed on attempting to shut the eyes, and the mouth being drawn to the opposite side. These symptoms continued, and, in three months, precisely similar events occurred on the left side, in a severer form, the mouth being drawn to the right.

1270. These phenomena continued for a very considerable period. At length a portion of the bone fell upon the upper surface of the soft palate, and was eventually dislodged and rejected by the mouth. It proves to be a portion of the sphenoid bone. The appearance of this bone affords an explanation of the interesting series of phenomena observed in this case. There was disease of the base of the brain, which interfered with the functions of the *fifth*, the *seventh*, and the *eighth* (*acoustic*) pairs of nerves[3].

1271. Loss of sensibility may arsise from disease of the opposite hemisphere, or of the fifth nerve, within or without the cranium. The former case constitutes hemiplegia of the face; the latter cases have been particularly described by

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[1] See the Medico-Chirurgical Review for October 1834, p. 415.

[2] Journ. Royal Inst. vol. xii, p. 231, 1821; vol. xiii, p. 120, 1822; Med. Chir. Trans. vol. xii, p. 105, 1822.

[3] Compare Mayo's Anat. and Phys. Com. No. II, p. 12—15.

Sig. Bellingeri[1] and Sir Charles Bell[2]. We have in these affections interesting calls upon our resources for the diagnosis.

1272. In hemiplegia the loss of sensation is rarely complete, and there is usually paralysis of the muscles of the face, and the susceptibility of the nostrils to irritants is unimpaired; this was the case in a patient whom I recently examined, by the kindness of Dr. Watson, in the Middlesex Hospital. In the case of disease of the fifth within the cranium, the loss of sensibility is frequently complete, the nostril has also lost its susceptibility to the impression of stimuli, and eventually the eye, not being nourished, shrinks and collapses; the power of the masticatory muscles is impaired, but the face is not distorted by any *apparent* paralysis.

1273. I need scarcely observe that the auditory nerve is liable to pressure or disease within the cranium or within the ear, and that deafness is the consequence. Paralysis of the seventh and that of the auditory not unfrequently exist together, as in the case which I have just related: this *coincidence* leads us to the conclusion that there is some *internal* disease.

1274. We must now fix our attention on the *glosso-pharyngeal* nerve. It has long been disputed by physiologists, whether the sense of taste be situated at the *tip* or at the *root* of the tongue. On this question another depends, viz. whether the nerve of taste be a branch of the *fifth*;—long termed the gustatory,—or the glosso-pharyngeal, the former being distributed upon the tip, the latter upon the root, of that organ. The celebrated Scarpa, in his splendid work on the Nerves[3], has detailed some novel and interesting experiments, from which he concludes that the sense of taste is situated at the tip of the tongue. He observes—

1275. "It is abundantly proved, not merely by anatomy, but by experiments lately made on the human subject by Alex. Volta, Professor of Physics, that the sense of taste resides in the tip of the tongue, and in its margins, almost to the middle of its length; and that, beyond that part, as far as to the base of the tongue, there is either no sense of taste at all, or to a very feeble degree. He applied a plate of zinc to the tip or margins of the tongue, and a silver spoon to the back of that organ beyond the middle part; the handle of the spoon was then brought into contact with the zinc, when an exceedingly acid taste was immediately perceived in the tip or margin of the tongue, which continued so long as the metals were in contact; but there was no sense of taste in the base of the tongue. It must not, however, be supposed that silver is incapable of communicating the electric impulse and stimulating the tongue; for, upon inverting the application of the metals, so that the silver be applied to the tip or margins of the tongue, and the zinc to its base beyond the middle part, when they are brought into contact, an acrid, burning, bitter, alkaline taste is perceived in the tip or margin, but none at all in the base, where the zinc is applied: hence it is evident that the principal and exquisite sense of taste is situated in the tip and anterior margins of the tongue, from its middle portion forwards, but that the rest of the base and the root possess merely the common sense of touch. By means of this very simple process any one can prove, by his own experience, that the acuteness of the sense of taste is proportionably diminished as the zinc or silver is removed from the tip and margins, towards the back and root of the tongue."

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[1] Dissertatio Inauguralis, 1818.

[2] On the Nervous System.

[3] Pages 16, 17.

1276. Dupuytren deduces the opposite conclusion, from experiments made by himself, with the view of an immediate application to a case of pathology:

1277. "He dissolved separately, in water, four substances of different savour, viz. sugar, sulphate of quinine, muriate of soda, and an acid. After these preparations, that the experiments might be conclusive, he began them upon healthy subjects. Pupils submitted to them: the tongue being held motionless, some drops of these substances were placed on its point; scarcely any savour was perceived; from whence the Professor concluded that their action upon this part is slight; then, the tongue being still held motionless, sapid bodies were placed on the middle and at the base of that organ; the different savours were perfectly perceived.[1]"

1278. *Both* these authors conclude that the *fifth* is the nerve of taste! Dupuytren proves by experiment that the sense of taste resides at the *posterior* part of the tongue; it is well known to him that the *fifth* is distributed to the *anterior* part of that organ; still he concludes that the fifth is the nerve of taste! So difficult is it to divest ourselves of preconceived opinions.

1279. These questions have been very recently taken up by Professor Panizza. The interesting paper of that physiologist is given entire in the last number of the Edinburgh Medical and Surgical Journal (vol. xlv, No. for January 1836, p. 70); and to it I must refer my reader, briefly stating that the conclusions to which its author is led, are—1, that the sense of taste resides towards the base of the tongue, in the filaments of the glosso-pharyngeal; 2, that the sense of touch in the tongue resides near its point, in the filaments of the *fifth;* and 3, that the hypo- or myo-glossal is the true motor of the tongue.

1280. The experiments of Professor Panizza appear to have been made with great care. An animal, in which portions of both glosso-pharyngeals had been removed, would be of constant physiological interest.

1281. It will be difficult to confirm or correct these views from experiment by clinical observations. The glosso-pharyngeal is double; and if one part were compressed by a tumor, or destroyed by disease, the other would still partially supply the sense of taste to the tongue.

1282. There is an interesting case in point, however, in a note to the translation of Dr. Abercrombie's work, by M. Gendrin, ed. 2, p. 627, which is given in great detail, and which will be read with great interest. The nerve was atrophied by the pressure of a cyst. "The sensibility to touch of the tongue was preserved in all its extent; the pain produced by the prick of a needle was felt over all the surface of the atrophied half, as well as on that of the other half. Cold and heat produced also the same sensation in each half of that organ. Sapid substances, hydrochlorate of soda, acetic acid, and extract of colocynth, were applied successively to each half of the tongue; on the atrophied portion they produced only a very slight impression of savour, which was not perceived till seven or eight minutes after their application; whilst the sensation produced by the application of these bodies was acutely felt, after a minute or a minute and a half, in the portion not atrophied.[1]"

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[1] Leçons Orales de Clinique Chirurgicale, t i, p. 407.

1283. Lastly, the researches of Sir Charles Bell, M. Magendie, M. Müller, and Prof. Panizza, have distinctly proved that the *posterior* column of the spinal marrow is formed by the sentient nerves. When this column alone is disorganized, the sense of touch alone is impaired.

II. *Of the Voluntary Nerves.*

1284. Paralysis of the voluntary nerves is marked by loss of voluntary power over the muscles.

1285. When the third, or the oculo-motory, is diseased or compressed, we have various forms of *strabismus*, according as the affection involves more or less of its branches. Some defect of vision is frequently conjoined with it. The strabismus consists in a *defect* or *loss* of movement, which is permanent; and in this it differs from *spasmodic* strabismus, from an affection of another system of nerves.

1286. When the *minor* portion of the *fifth*, or the *masticatory* nerve is paralyzed, the temporal, the masseter, and the buccinator muscles lose their voluntary powers, and eventually shrink and become emaciated. I may refer you and to a case published by Sir Charles Bell[2]. It exists in the case in which the *fifth* is entirely destroyed or compressed *within* the cranium. The patient loses the power of mastication, and of blowing a trumpet, or of smoking a pipe, on the affected side. There is no *distortion*, as in the disease of the *seventh* or facial nerve.

1287. When this nerve is entirely paralyzed, the face is extremely distorted, especially in laughing, &c. and the orbicularis has lost its powers.

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[1] Pages 629, 630. Compare Mayo's Com. No. II, p. 14.

[2] On the Nervous System, 1830, p. cxiv.

1288. Sir Charles Bell's work[1] is replete with the most spirited descriptions of the paralysis of the *fifth* and of the *seventh* pairs of nerves. But I must refer my reader to his admirable work itself.

1289. Sig. Bellingeri and Sir Charles Bell have run the same career of discovery in distinguishing paralysis of the *seventh* or facial nerve. The following case is copied from the former writer:—

1290. "A patient was lying at St. John's Hospital, under the care of Professor Geri, having been affected for a long time with an inflammatory tumor behind the right ear, which had extended both above and below the mastoid process, so as to compress the facial nerve, at its point of exit from the stylo-mastoid foramen; such was the decided opinion of the Professor, and of Drs. Gallo and Riberi. Meantime the patient presented almost entire paralysis of the muscles of the right side of the face, and distortion of the left side of the mouth. There was, in fact, complete paralysis of the frontal muscle, the supraciliary, the orbicularis palpebrarum, the elevator alæ nasi et labii superioris, the caninus, zygomaticus, the right side of the orbicularis labiorum, the triangularis and quadratus menti, and cutaneus colli. The motion of the temporal, masseter, buccinator, and pterygoid muscles, was perfect, or nearly so; of the disgastricus we could form no opinion. The motion of the ball of the eye and of the upper eye-lid was free; the vision of the right eye was, however, a little injured; the tongue, also, was moved with some difficulty, yet was the taste proved to be unaffected on either side of the tongue; the sense of touch was also uninjured in the face; the hearing was considerably impaired in the right ear; the abscess had opened in the external ear. The patient died in about two months. An effusion of pus was found in the cavity of the tympanum, contained in the aqueduct of Fallopius, and compressing the facial nerve in its course; there was no pus or trace of inflammation about the stylo-mastoid foramen after death; but marks of recent inflammation and suppuration in the right lobe of the cerebellum; the fibres and trunk of the fifth pair were uninjured[1]."

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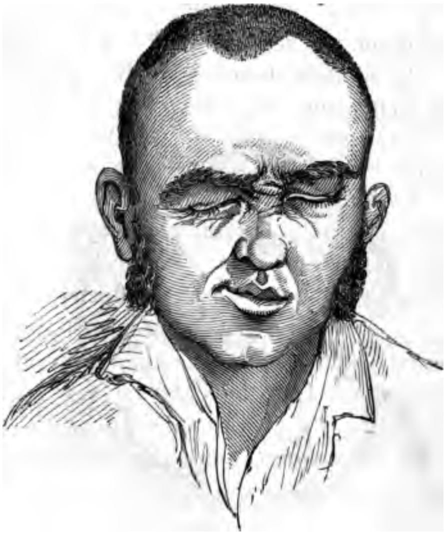
[1] On the Nervous System.

1291. The paralysis of the *seventh* in hemiplegia is partial only: the voluntary portion is paralyzed; whilst the branch which belongs to the excito-motory system is scarcely affected; the eye-lid is closed by its sphincter, the orbicularis, during sleep. In *total* paralysis of the *seventh* from the pressure of a tumor, for instance, the orbicularis loses its power, and the eye remains exposed and becomes inflamed. The inference from these facts is, that the *seventh* is *more* than a cerebral nerve. Indeed, the function of the orbicularis, in sleep, so similar to that of the other sphincters, leads to the same conclusion. The question still, however, requires elucidation. In the mean time my reader will have a perfect conception of this distinction on comparing the two subjoined cuts:—

1292. The first represents the case of hemiplegic paralysis of the face: the eye-lids of the paralytic side are closed, though less firmly than those of the left.



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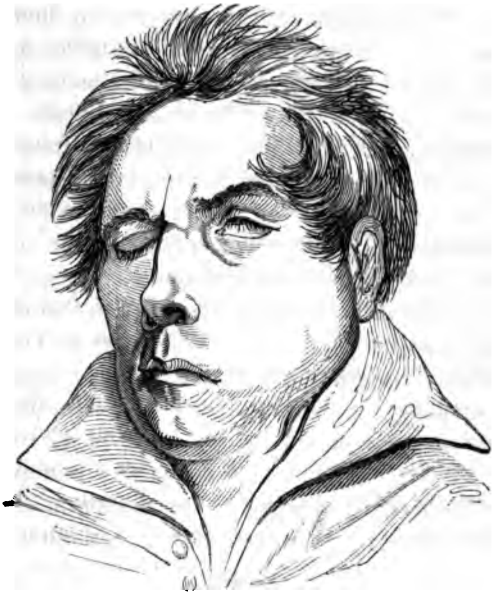
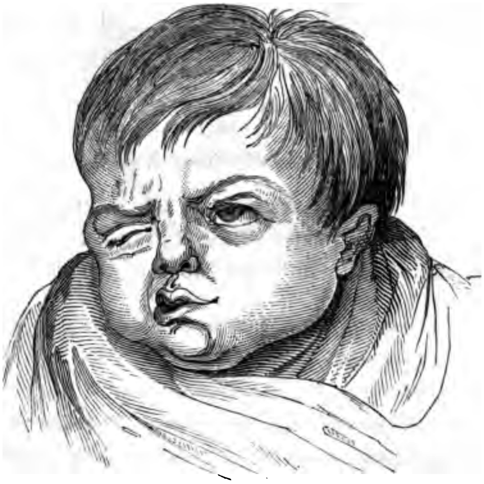
[1] See the Med. Chir. Review, for October 1834, p. 419.

1293. This cut represents the seventh or facial nerve compressed by a tumor under the ear: the orbicularis is paralyzed, and the patient is incapable of closing the eye-lids.



1294. I subjoin the representation of a similar affection in an infant: its mother observed,—"it laughs and cries on the *right* side, and cannot close its *left* eye!"



1295. I now come to the myo-glossal nerve. Dupuytren gives a most interesting account of a case supposed to be paralysis of this nerve[1]:—

1296. There were rheumatism of the neck, situated along the vertebræ and occiput; and the gradual loss of muscular power, with atrophy of one half of the tongue, the sense of taste towards the base of the tongue remaining entire. The myo-glossal nerve is supposed to have been involved in the disease at and after its exit from the cranium; hence the affection of the tongue. The scarificator and cupping glasses were repeatedly applied behind the mastoid processes, with satisfactory results.

1297. After the myo-glossal, I must briefly allude to paralysis of the *anterior* spinal nerves, or *prolongations* of cerebral voluntary nerves *within* the spine.

1298. In the Journal de Physiologie of M. Magendie, t. vi, p. 138, there is a case by M. Velpeau tending to prove the difference of function of the posterior and anterior spinal nerves. M. Velpeau observes, in conclusion—"the distinction between the different functions of the nervous roots—a distinction made so plain by experiments on animals—is still very obscure when pathological facts direct our judgment of it. Nevertheless, the remark contained in this note is the most conclusive that has been made in favour of this opinion."

1299. In every case of spinal affection it will be interesting to determine the degree in which the sentient and voluntary columns and nerves are involved in the disease.

II. AUGMENTED ACTION.

I. *Of the Sentient Nerves.*

1300. Opposed to *paralysis*, is *augmented action*. This induces, in reference to the sentient nerves, various kinds of *pain*, the principal of which are those which occur in—

I. *Inflammation; Ulceration; Tumors; &c. of the Nerves.*
II. *Neuralgia, or Tic Douloureux.*
III. *Hemicrania Intermittens; Brow Ague, &c.*

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[1] Leçons Orales, t. i, p. 403.

1301. In reference to *inflammation of the nerves*, M. Descot observes,—

1302. " Acute idiopathic inflammation of a nerve must, I think, be very rarely met with. The nerves are sometimes affected with a chronic inflammation, and it is generally observed at their extremity in the stump of amputated limbs." " When the nerves are in this condition, the slightest contact causes the patients sufficient pain to induce them to submit to a second amputation.

1303. " In many cases of sciatica, I think that the sciatic nerve is the seat of the disease; the pain follows, generally, the course of the nerve so exactly, and the adjacent parts are so free from all pathological appearance, that I think the nerve alone is the seat of the pain; and the affection, it appears to me, must arise from an inflammatory action of the neurilemma (νεῦρον, *a nerve*, λέμμα, *a coat*), which terminates frequently in the exudation of a serous fluid." p. 195.

1304. The *subcutaneous tubercle* is attended with most acute pain, proceeding from one point, often extending along the course of the nerves, occurring in paroxysms, which take place spontaneously, or are occasioned by friction or other slight injury of the part, and which frequently disturb the night's repose. The case is distinguished by an examination of the part affected, when a small body, of the magnitude of about half a small pea, is felt under the integuments; this part is generally tender to the touch, especially during the paroxysm; and an acute pain is induced, and is extended along the nerves, by pressure.

1305. I published a case of this affection in the Edinburgh Med. and Surg. Journal, vol. xi, p. 466. It occurred in the thumb of a shoemaker, probably from a puncture of his awl. It was cured at once, after years of suffering, by excision.

1306. The pain of *tic douloureux* occurs in paroxysms, which are sudden, irregular in their occurrence, frequently more or less transient or momentary, induced by the act of eating, or talking, or by the contact of external bodies with the acutely sentient extremities of the nerves.

1307. This disease is distinguished by that which the term *tic* means originally; viz. by a sudden contraction of several muscles, with distortion of the face. Its seat is various—in different parts of the face, of the limbs, and of other parts of the surface of the body.

1308. Many remedies have been proposed for this formidable malady, as division of the nerve, arsenic, carbonate of iron, &c. It frequently arises from derangement of the primæ viæ, which must be carefully corrected.

1309. The *hemicrania intermittens*, or *brow ague*, is apt to recur in spring or autumn, from exposure to the north-east wind: it prevails in damp or marshy districts, and it is frequently observed to accompany the epidemic influenza. It frequently exists as a complication of intermittent.

1310. This ague-pain occupies the brow, the temple, the forehead, the occiput, &c. it occurs in paroxysms frequently of considerable regularity; it is often excruciating, occasionally inducing delirium, and, still more frequently, redness of the conjunctiva. It may recur once or twice in the course of the day.

1311. This pain is almost certainly removed by the quinine or the arsenic.

1312. For a full account of these painful diseases, I refer my reader, with great satisfaction, to the works of Sig. Bellingeri and Sir Charles Bell; and to the still more recent works of Mr. Swan[1], in this country, and of M. Descot[2], in France.

II. *Of the Voluntary Nerves.*

1313. I have hitherto treated of paralysis of the cerebral sentient and voluntary nerves; I must now have drawn the reader's attention to certain spasmodic affections of the latter of these, if I had not my doubts whether the *cerebral* nerves, as distinguished from the *true spinal*, were affected with Spasm. This mere doubt will suggest an inquiry of the deepest interest, both in physiology and pathology.

1314. The substance of the brain[3]; the olfactory nerve, the retina, the optic nerve, the auditory nerve[1]; the glosso-pharyngeal[2], are *insensible* when wounded or pinched. Wounds of the cerebrum do not induce spasmodic contraction. No experiment has hitherto been made upon any purely *cerebral* voluntary nerve, with the view of determining whether, in such a case, there would be spasmodic action. Perhaps such a nerve does not exist free from the intermixture of *true spinal* filaments. Is the *third*, or the *oculo-motory*, of this character? These, with many other questions, are still left for future inquiry.

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[1] A Treatise on Diseases and Injuries of the Nerves, new ed. 1834.

[2] Dissertation sur les Affections Locales des Nerfs; Paris, 1825.

[3] Floureus, Recherches sur le Systême Nerveux, p. 17.

IV. OF DISEASES OF THE CEREBELLUM.

1315. It remains for me to make a few remarks upon diseases of the cerebellum, before I pass on to the interesting subject of diseases of the spinal or excito-motory system.

1316. The experiments of M. Flourens[3], the experiments and clinical observations of M. Serres[4], and similar observations of M. Andral[5], are the principal sources of our knowledge of this subject.

1317. M. Flourens considers the cerebellum to be the organ of equilibrium in the movement of the animal frame, judging from experiments of the most interesting character.

1318. M. Serres' opinion is that of Dr. Gall, founded upon new experiments and cases,—that the cerebellum, and especially its median lobe, is the excitor of the genital organs. I think neither these experiments nor cases sufficiently isolate the functions of the cerebellum and of the upper part of the spinal marrow. The median lobe of the cerebellum can scarcely be diseased without affecting the medulla oblongata; and the experiments seem also to have involved an injury of that part of the nervous system, as we may judge from the following extract:—

1319 "In oxen knocked down by the blow of a hammer upon the posterior part of the occiput, I have found the cerebellum torn and fractured in its superior part, in those animals in which there had been a very distinct oscillation of the penis during the experiment.

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[1] Magendie, Journ. de Physique, t v, p. 38.

[2] Panizza, Edinb. Med. and Surg. Journ. vol. xlv, p. 86.

[3] Recherches, &c. p. 36.

[4] Anatomie du Cerveau, t. ii, p. 601; Journ de Phys. t. ii, pp. 172, 249.

[5] Clinique Médicale, t. v, p. 658.

1320. " In a stallion, the leg of which had been crushed by a carriage, an amputation knife plunged above the middle lobe of the cerebellum, from the front to the rear, *till it reached the top of the spinal marrow*, produced a very distinct erection.

1321. " But this result has been especially established since the publication of these facts, by one of our talented physiologists, Professor Ségalas.

1322. " If, in a male guinea-pig, which has had the brain laid bare, says this physiologist, a stiletto be plunged into the cerebellum, *so as to arrive at the superior part of the spinal marrow*, *erection* is produced; if the stiletto be then carried into the vertebral column, as far as the lumbar region, *ejaculation* takes place, whilst the bladder, if full, no longer preserves its contents. The same phenomena are observed in decapitated guinea-pigs, when the same experiment is performed with a stiletto from above to below upon the spinal marrow.

1323. " This last experiment, which I have repeated, and by which any one may satisfy himself, proves two things: first, that irritation of the cerebellum (?) produces erection; secondly, that the inferior part of the spinal marrow produces ejaculation, and acts more especially upon the secretory apparatus of the semen[1]."

1324. M. Andral observes[2],—" In the thirty-six cases which we are analyzing, the genital system is only mentioned three times. In one of these cases, a permanent erection of the penis was observed during the whole time that the patient was attended. There was, in a second, a compression caused by a tuberculous mass upon the right lobe of the cerebellum, and on the medulla oblongata."

1325. Diseases of the cerebellum, when they induce paralysis, usually affect the *opposite* side of the body, and the inferior more than the superior extremities.

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[1] Anatomie du Cerveau, t. ii, p. 605, 609.

[2] Op. cit. t. v, p. 735.

1326. Convulsions are more frequent in diseases of the cerebellum than paralysis. They affect many parts, and resemble epilepsy; or only one part. There can be little doubt that it is the adjacent medulla oblongata which is really irritated so as to produce these phenomena.

1427. In some instances there has been a loss of balance, such as occurs in intoxication.

1328. Sometimes the sensibility has been affected,—exalted or impaired. In some cases there has been amaurosis.

1329. Vomiting sometimes occurs as a prominent symptom, as in many other diseases of the encephalon. This, as well as the affections of the genital organs, is obviously a result of irritation of the medulla. M. Andral observes[1] with great justice,—" The immediate cause of the effects produced by a lesion does not always reside in the seat of the lesion; and, whether it be reflected to one or another point specially destined for the accomplishment of a certain act, it is the latter which will always be found deranged."

V. DISEASES OF THE SPINAL MARROW.

1330. It is utterly impossible to understand the diseases of the spinal marrow, without a constant reference to its peculiar functions, as distinguished from those of the encephalon.

1331. Such disease of the Spinal Marrow as may materially affect its functions, induces, in the first place, paralysis of the cerebral nerves, sentient and voluntary, which run along its course, forming a part of its structure; and, in the second, either an excited or paralyzed condition of its own peculiar functions. The symptoms combine, therefore, paralysis of sensation and voluntary motion in the parts below the disease, with spasm, and ultimately paralysis, resulting from the affection of the *True* Spinal Marrow.

1332. In treating of diseases of the Spinal Marrow, I shall pursue the following order. I shall notice—

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[1] Op. cit. t. v. p. 734.

I. *The Centric Diseases, or Diseases of the True Spinal Marrow itself.*
II. *The Eccentric Diseases, or Diseases excited through the Excitor Nerves.*
III. *The Diseases of the Motor Nerves.*

1323. Of these diseases, the first is

I. INFLAMMATION WITHIN THE SPINE,

and this, like encephalitis, § 1129, is to be distinguished into

I. *Inflammation of the Membranes, or Spinal Meningitis.*
II. *Inflammation of the Substance, or Spinal Myelitis;*
    1. *Of the Cerebral, or Sentient and Voluntary Tracts.*
    2. *Of the True Medulla; and*
    3. *Of its Principal Divisions.*

1333. I. *The Causes* of inflammation within the spine are, principally, blows or falls, violent muscular efforts, and exposure to damp or cold. One patient became affected with acute spinal myelitis from being long exposed to the rain and cold in an open boat. This affection has frequently occurred from the pernicious custom of lying upon the damp grass. Rheumatism seems occasionally to have led to this disease. The observations of M. Louis[1] have distinctly shewn the connection between caries of the vertebræ and spinal myelitis.

1334. II. *The Symptoms.* It is rare that meningitis of the spine exists without meningitis within the cranium. It is equally rare for the membranes to be inflamed, or one of the cerebral tracts, without affection of the substance, or of the other portions of the Spinal Marrow. The distinctions between these affections are not, therefore, easily defined. Happily, they are not essential to the treatment. Those symptoms which point to such distinctions will be noticed, however, as I proceed.

1335. A much more interesting distinction arises from the various locality of the inflammation, according as it affects the medulla oblongata, or the cerebral, dorsal, lumbar, and sacral portions of the Spinal Marrow. A correct knowledge of the anatomy and physiology frequently enables us to define the region of the Spinal Marrow which is the seat of the disease, and guides us at once in our prognosis, and in the local application of remedies, the most important part of the treatment.

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[1] Mémoires sur Diverses Maladies, p. 410.

1336. In general, the symptoms of meningitis are *more* those of *irritation* of the Spinal Marrow, or *spasm;* those of *myelitis*, *more* those of *destruction* of the organ, or *paralysis*. Both kinds of symptoms may exist, however, or follow each other, in both diseases.

1337. Diseases, especially those of the nervous system, are usually more complicated in actual patients, than as they are described in books. Hence a difficulty in the commencement of practice. We are led to expect impossibilities—diseases well defined in their simple forms. It will be well, in reference to our present subject especially, to become well acquainted with the anatomy and the physiology, and we shall then be able to interpret each symptom justly, as it appears.

1338. Amongst the first symptoms of spinal *meningitis*, is local *pain* in some part of the spinal column, augmented by the movements of the patient, and by percussion, but rarely, if ever, by pressure, along the spine. This pain sometimes extends along the back and limbs, in which there is then tenderness on pressure,—a symptom which may serve to distinguish meningitis from myelitis, in which there is usually loss of sensibility.

1339. The next important symptom is spasm, or various kinds of muscular contraction. The head, the neck, or the trunk is bent backwards; or there is trismus, torticollis, partial or complete opisthotonos, or contractions of the limbs, —constant, or recurrent, or exacerbated, in paroxysms, on moving, or being moved, &c. with extreme pain. Sometimes there are convulsions.

1340. The respiration is sometimes difficult. There is sometimes retention of urine and constipation.

1341. The symptoms will vary according as the meningitis exists at the base of the brain, at the upper, or at the lower part of the spine, principally.

1342. The symptoms of spinal *myelitis* are those of paralysis of sensation and voluntary motion: a sense of numbness, an impaired sensibility; a sense of feebleness, an impaired muscular power; at first observed singly or combined, in one or both of the inferior, or superior extremities.

1343. In some cases, probably of complication with meningitis, there is augmented sensibility. In other cases, there are spasmodic or convulsive affections.

1344. If the disease proceeds, the paralysis of sensation and voluntary motion gradually augments. Generally the paralysis affects first the inferior, and afterwards the superior extremities; far more rarely it pursues a contrary course: occasionally the motions alone, and very rarely the sensations alone, are paralyzed.

1345. If the disease occupy the *upper* parts of the Spinal Marrow, the respiration, and even the action of the larynx and pharynx, become impaired, and we have difficulty or choaking in swallowing; or asphyxia. There is sometimes the sensation of a cord-like tightness across the epigastrium. If the *lower* part of the spine is affected, the bladder, the rectum, and the sphincters, are variously paralyzed, and there may be retention of urine and constipation, or involuntary evacuations; or retention and involuntary flow of urine may be combined. The condition of the bladder, and the condition of the rectum should be ascertained by proper examinations, *in every case.*

1346. In some instances there is perfect impotence; or inertia of the uterus; in others, the patient has become a father, or the uterus has been excited to expel the fœtus. On these points I refer my reader to the observations of MM. Chaussier[1], Serres[2], Brachet[3], &c.

1347. These differences, doubtless, admit of explanation by a reference to the *kind* of affection,—irritation, or destruction, and its *locality*,—in the cervical, dorsal, or lumbar portions of the Spinal Marrow.

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[1] Traité de la Moëlle Epinière, par M. Ollivier, ed. 2, p. 791.

[2] Anatomie du Cerveau, t. ii, p. 609.

[3] Recherches du Systême Nerveux Ganglionaire, p. 216.

1348. There is a valuable case of uncomplicated spinal *meningitis*, considered by M. Cruveilhier as affording a type of that disease by M. Dance, in M. Ollivier's work[1], p. 551. In M. Louis's admirable 'Mémoirs' there is an interesting paper on the condition of the Spinal Marrow in caries of the vertebræ, in which we perceive the symptoms and morbid changes in *myelitis;* p. 410; and especially pp. 445—447.

1349. III. *The Morbid Anatomy* is in every respect similar to that of cerebral meningitis and myelitis, §1146. It is rare, indeed, that spinal meningitis occurs without a similar affection of the membranes of the brain; injection of the pia mater, and of the spinal vessels in general; effusion of serum, lymph, pus, and blood, under the arachnoid,—diffused, or in portions; perhaps softening of the adjacent medulla. The arachnoid itself is free from blood-vessels; the morbid changes supposed to take place in this membrane have their seat in the subjacent cellular membrane, or in the pia mater. In *chronic* meningitis there are sometimes membranous adhesions, and effusions of a cartilaginous hardness.

1350. The principal morbid change in myelitis is softening, which may occupy the whole, or any portion, either side, or the anterior or posterior part of the Spinal Marrow; it frequently affects the cervical or lumbar portions. There is, as in the same affection of the brain, a degree of tumefaction. Induration is the frequent result of *chronic* myelitis.

1351. IV. The most efficacious *Treatment* of inflammation within the spine, consists, I believe, in the application of cupping, in acute cases, and of issues and setons in the chronic.

1352. Cupping may be applied so as to involve the two principles of local depletion and counter-irritation; for this purpose the scarification should be applied deeply and crossed, and little blood should be drawn; the operation being repeated according to the violence of the disease, and the powers of the patient.

1353. In reference to the use of issues, M. Louis makes a very apposite remark, p. 447:—"Experience has demonstrated the utility of issues in Pott's disease, although this affection may be of long standing, and voluntary movement more or less seriously affected. A necessary consequence of this fact is, that the same means ought to be employed in simple or primitive softening of the spinal marrow."

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[1] Traité de la Moëlle Epinière, ed. 2.

1354. The administration of mercury in the acute cases, and in the chronic cases, when these are uncomplicated with a tuberculous diathesis, is an important measure.

1355. The most moderate diet should be enjoined, the bowels should be kept free; the recumbent posture, with the utmost quiet, should be preserved. For further suggestions for the treatment, I may refer my reader to what I have said upon the treatment of encephalitis: see § 1149.

VII. CONGESTION; HÆMORRHAGY.

1356. I believe that little can be said of these forms of spinal disease. If they can ever be suspected during life, it can only be from the suddenness of the accession or attack of the symptoms; and the treatment must be the same as in acute inflammation within the spine.

VIII. CENTRIC CONVULSIONS, OR EPILEPSY.

1357. Any disease within the spine, whether effusion, tumor, exostosis, &c. may induce convulsions or epilepsy.

1358. Fright, or other sudden mental emotion, has induced convulsion; and this convulsion has been repeated, affording one of the most deplorable cases of epilepsy.

1359. It is well known that profuse hæmorrhagy has led to convulsion. An interesting question presented itself to me upon this point: is the convulsion from hæmorrhagy *cerebral* or *spinal* in its origin? It struck me that this question might be submitted to a decisive experiment.

1360. The sheep, when killed by opening the large vessels near the heart, becomes affected with convulsions. What is the effect, if the brain be previously separated from the spinal column? In August, 1835, I went, with my friend Dr. Heming, to submit this question to experiment. The large vessels were first divided in a sheep, and the instrument was then turned so as entirely to separate the head from the trunk, with the sole exception of the skin. We watched the effects of the flow of blood: at length the animal became violently convulsed, as in ordinary circumstances of profuse hæmorrhagy. In this case, then, the convulsion from the loss of blood was obviously *spinal*.

1361. I have already suggested, indeed, that *all* convulsive diseases are affections of the true spinal marrow.

1362. The cerebrum is obviously the seat of the mind: it is neither sentient itself, nor the originator of motions in itself[1].

1363. The true spinal marrow, on the contrary, is the term of certain excitements, and the source of certain motions,—the centre, in a word, of a peculiar series of excito-motory phenomena, physiological and pathological. Unlike the cerebrum, it induces, if stimulated, convulsive movements, in the organs appropriated to ingestion and egestion, and in the limbs.

1364. Diseases within the cranium, by irritating excitor nerves, or the medulla oblongata, induce convulsions or epilepsy,—too frequently, alas! of an incurable character.

1365. Disease within the spinal canal may prove the source of convulsion or epilepsy still more immediately. This form of epilepsy is also, for the most part, incurable.

1366. These cases are, for obvious reasons, frequently met with in hospitals, asylums, and workhouses.

1367. Hence the idea that epilepsy is not to be subdued by medicine, prevalent amongst those who draw their conclusions from observations made in these establishments.

IX. PARALYSIS AGITANS.

1368. I must now draw the reader's attention, very briefly, to another disease of the spinal marrow,—the Paralysis Agitans. Its symptoms have been well described by Mr. Parkinson[2]; but its morbid anatomy has not been traced. It is usually a disease of advanced life.

1369. Paralysis Agitans is either—

1. *General; or*
2. *Hemiplegic.*

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[1] Flourens, Recherches, &c. p. 17—23.

[2] An Essay on the Shaking Palsy, 1817.

1370. The first symptoms of this most *insidious* disease are weakness and tremor, of the head, for instance, of the hand, &c. In about a year, the other hand, or a lower extremity, is affected, or the patient loses his balance in walking. Generally no *cause* can be assigned.

1371. There is perpetual tremor, even when the part is supported: the head, the hand, the leg, are moved incessantly: reading and writing become impossible, and the patient cannot guide his hand to his mouth; at length he loses his balance, and there is a constant tendency to fall forwards, and, in order to avoid this, to run or move with a quicker pace, and on the toes.

1372. At a later period the tremor continues during sleep even, augmenting until the patient awakes. There is increased weakness, the trunk is bent forwards, the upright position can be no longer supported. The articulation becomes indistinct, mastication and swallowing imperfect. The bowels are all along torpid, then obstinate; at last the urine and fæces are passed involuntarily. In the last stage of all there is slight delirium or lethargy.

1373. The symptoms have, in several particulars, a marked resemblance to the effects observed by M. Serres, of diseases of the *tuber annulare*, and of the *tubercula quadrigemina*[1].

1374. Of the hemiplegic Paralysis Agitans, I have long had an interesting case under my care.

1375. —— Macleod, aged 28, is affected by weakness and agitation of the right arm and leg, augmented on any occasion by agitation, and on moving: it is observed as he walks, or when he passes his cane from one hand to the other:—there is, besides, a peculiar lateral rocking motion of the eyes, and a degree of stammering and defective articulation.

1376. Nearly allied to Paralysis Agitans is the

X. TREMOR MERCURIALIS.

1377. This disease affects workers in mercury, chiefly those employed in silvering mirrors.

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[2] Anatomie du Cerveau, t. ii, pp. 634, 642, et seq.

1378. The symptoms are, at first, paralytic tremor and debility, and perhaps ptyalism ; afterwards convulsive agitation of the limbs whenever they are moved. The articulation becomes imperfect. The hands are so agitated, that a partly filled cup cannot be conveyed to the mouth[1] without spilling the liquid. On attempting to walk, the limbs dance and perform irregular movements. Whilst sitting still, the patient may remain free from chorea ; but on every exertion of the volition, and on every occasion of mental agitation, the irregular movements are renewed. The sleep is disturbed : the patient awakes alarmed by terrific dreams ; there are nervousness and debility ; the bowels are constipated[2].

XI. THE ECCENTRIC DISEASES OF THE SPINAL MARROW.

I. ON ECCENTRIC EPILEPSY.

1379. I now bring before my reader one of the most interesting subjects comprised in the class of diseases of the Nervous System,—that form of epilepsy which takes its source in the *excitor nerves* of the true spinal system, involving the axis of this system, and its motor nerves, in their turn,—functionally, however, not organically. It is for this reason that I have denominated this form of epilepsy *eccentric.*

1380. The Eccentric Epilepsy is to be viewed as *curable*, however *difficult* of cure. By avoiding the exciting causes, its attacks are avoided, the susceptibility to returns subsides ; these returns become less frequent, and less severe, and at length frequently cease altogether. Every thing depends upon rigid rules proposed by the physician, and strictly and perseveringly observed by the patient.

1381. In describing the *causes*, *symptoms*, and *treatment* of Eccentric Epilepsy, I must recall to mind all that I have said respecting the anatomy and physiology of the true spinal system. Every part of this system is distinctly, but exclusively, involved in the circumstances of this disease: if the encephalon suffer, it is only as an *effect* of the convulsive attacks.

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[1] In a letter written from Venice by the learned Dr. Walter Pope, on the Miners of Mercury in Friuli, and published in the Philosophical Transactions, vol. i, for 1665, a case is detailed of a patient who " could not with both hands carry a glass full of wine without spilling it, though he loved it too well to throw it away."

[2] See further, Bateman's Diseases of London, p. 162.

1382. I. The principal *Causes* of Eccentric Epilepsy are,—1. the presence of indigestible food in the *stomach;* 2. the presence of morbid matters in the *intestines;* 3. *uterine* irritation. The first of these acts through the medium of the pneumo-gastric, the second and third through that of peculiar spinal nerves,—all *excitors* belonging to the true spinal system.

1383. I have so repeatedly known a patient, subject to this form of epilepsy, experience an attack within five minutes of eating some indigestible article of food,—or on experiencing a deranged condition of the bowels, or on every return of the catamenial period, as to leave no doubt upon my mind upon these important points. I have known the attacks prevented by a steady and cautious attention to rules in reference to these circumstances.

1384. II. In detailing the *Symptoms* of epilepsy, I shall have to repeat all that I have said respecting the physiology of the true spinal system: every part, every function, which belongs to that system, is involved in the pathology of epilepsy: the functions of ingestion and of egestion are precisely those affected in this disease; the *causes* act through the *excitor* nerves, the *symptoms* are manifested through the *motor* nerves of that system.

1385. The first thing observed is a varied *distortion of the eye-ball*, which is drawn from the axis of vision, generally upwards, and outwards, or inwards.

1386. The second symptoms are a forcible *closure of the larynx* and *expiratory efforts*, which suffuse the countenance, and probably congest the brain, with venous blood. In all these circumstances there is a most marked and important difference between epilepsy and hysteria, on which I shall insist hereafter.

1387. In the third place, we observe that the tongue is thrust out of the mouth by the genio-glossal muscle, whilst the teeth close upon it by the action of the masseters, and it,—or the under lip,—is frequently severely bitten. Or, without the spasmodic protrusion and consequent injury of the tongue, there is grinding of the teeth.

1388. We next observe convulsion,—which is general, or of the whole muscular system, or hemiplegic, or confined to one side; or it occurs in the form of trismus, torticollis, in one limb, &c.

1389. During these attacks, the *expulsors* of the fæces, the urine, the semen, sometimes act, and there is sometimes rigidity of the penis.

1390. It will be seen, from the brief account of the symptoms, how peculiarly an affection of the true spinal or excito-motory system epilepsy is. The previous arrangement of the functions of this system, in our minds, will enable us to explore the symptoms of this disease more accurately.

1391. We must now consider another set of *facts* as *causes*, and another set of *symptoms* as *effects*, of the paroxysm.

1392. Deep sleep; broken sleep; loss of rest; passion; vexation; exhaustion; inanition; and especially rising with an empty stomach; have frequently led to a paroxysm of epilepsy, and must, consequently, be carefully avoided in our rules of regimen for the cure of this disease. I may here allude to the relation of the συνουσια and epilepsy.

1393. I have known the act of washing the hands in cold water induce an attack of epilepsy; I have known dashing cold water on the face prevent such an attack. These phenomena must be observed with accuracy.

1394. III. The *Effects* of the epileptic paroxysm, to which I have just alluded, are the venous congestion of the brain, and the consequent effusion of serum in repeated attacks,—effects so carefully to be avoided by the appropriate remedies, on account of the havoc produced by them on the mental faculties and cerebral functions.

1395. IV. *The Treatment.* Our task consists in preventing the attacks of epilepsy; and, if this cannot be accomplished, in treating these attacks, and obviating their effects on the *cerebral* system. We accomplish this task by cautiously avoiding the *causes*, by moderating the *paroxysms*, and by local means of subduing vascular action, and perhaps of depleting the vessels of the brain.

1396. The strictest rules must be laid down for the diet, for the state of the bowels, for conducting the catamenial periods. These last should be passed in bed, the feet and abdomen should be fomented, the warm water enema and the opiate enema should be administered.

1397. The immediate accession of the paroxysm may sometimes be prevented by dashing cold water on the face, or by exciting the nostrils by snuff, &c. In this manner the disposition to closure of the larynx, and expiratory efforts, is exchanged by sudden acts of inspiration.

1398. In the paroxysm, the patient must be prevented from injuring himself by falls or blows. In this danger of injury we have another marked distinction between epilepsy and hysteria.

1399. The stupor or coma induced by the paroxysm may require the administration of blood-letting, general or topical, according to its degree and duration, and probable effects.

1400. Besides the means to which I have alluded, other remedies have been proposed for the cure of epilepsy, in an empirical manner, without due attention to the *kind* of the disease. It is obvious that little attention can be paid to propositions and observations so vague and indefinite. These various remedies must be tried anew, after a strict diagnosis. We shall then arrive at an approximation to the truth in reference to the value of these remedies respectively.

1401. The views which I have given of eccentric epilepsy are amply confirmed by these facts, that there is no constant morbid change observable in this disease, and that many patients, after long years of its attacks, have finally and fully recovered,—facts which ought to encourage us steadily to pursue the mode of treatment.

1402. A system of exercises; regulated sleep; the shower bath; tonic remedies, &c. &c. must be added to the other plans.

II. ON TETANUS.

1403. Tetanus has long been divided into the Idiopathic and the Traumatic. I propose to divide it into the *Centric* and the *Eccentric*.

1404. Centric Tetanus is that produced by disease within the spinal canal itself. Eccentric Tetanus arises principally from a wounded, lacerated, or punctured, nerve, and possibly from other sources of eccentric, nervous, and convulsive affection,—as deranged stomach, deranged bowels, worms, &c. It is, therefore, both traumatic and idiopathic.

1405. There is a predisposition to tetanic affection in hot climates; sudden changes of temperature, and exposure to cold and damp, are exciting causes. In hot climates, infants are subject to Tetanus within nine days of their birth, as some have supposed, from the condition of the umbilicus[1].

1406. The spasms first affect the muscles about the neck; then those which approximate the maxillæ; and there is trismus; then the muscles of the pharynx, and the deglutition becomes difficult. The limbs and the whole frame become stiffened by spasm, which is still further augmented by the slightest touch, jar, or excitement. There is constipation. No one can fail to see that these are affections of the true spinal system. The cerebral system is unaffected. Baron Larrey observes[2]—"The functions of the brain remain unaffected till the last moment of life; so that the unfortunate patient who is attacked with this disorder is conscious he is dying."

1407. One fact is observable. The influence of the lesion of the nerve is not only carried by excitor nerves to the spinal axis, and *reflected* upon motor nerves, but it frequently pursues a *retrograde* course along the spinal marrow: a wound of the foot, not less than the wound of the hand, leads to trismus. A similar event occurs in experiments on the decapitated turtle: if one of the lateral nerves be laid bare and pinched continuously, the muscles of the upper extremities, as well as lower, are forcibly contracted. This is, in my mind, the very *type of Tetanus*. The same retrograde action is produced, if in a decapitated frog the spine be divided, and the lower end of the upper portion of the spinal marrow be pinched with the forceps.

1408. As in epilepsy, no constant morbid appearances have been found in the cranium or spinal canal.

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[1] See Cleghorn on the Diseases of Minorca, vol. v, p. 36.

[2] Mémoires de Chirurgie Militaire, t. i, p. 238.

1409. In an interesting case of Tetanus, given by Dr. Reid, in the Transactions of the Association of Physicians in Ireland, vol. i, p. 113, great vascularity and an effusion of blood were found round the spinal marrow. In another case, detailed by Mr. Brayne, of Banbury, in the London Medical Repository, vol. xiv, p. 1, two or three inches of the inferior dorsal portion of the spinal marrow were suffused by a continuous blush of inflammation, and three small, hard, white laminæ were seen between the arachnoid and the pia mater. M. Ollivier, on the other hand, shews that such morbid appearances are by no means constant; Dr. Abercrombie and M. Gendrin come to a similar conclusion[1].

1410. The treatment of Tetanus is generally unavailing. Considering the *cause* of this malady, and its mode of operation, we should be naturally led to propose the division of the injured nerve, or amputation. There is a successful case of the former operation in the Medical Gazette, vol. xi, for 1832-3, p. 623[2]. In reference to the latter, Baron Larrey observes, in his account of the campaign in Russia[3],—"With one exception, all who were seized with this cruel disease, died. That one, who was wounded in the foot, owed his safety to the amputation of the leg, performed as soon as the first symptoms of Tetanus supervened. The removal of the arm and the amputation of the leg were generally successful." These plans have not succeeded in the hands of other surgeons,—perhaps from being adopted too late.

1411. I wish I had space for M. Dupuytren's admirable observations, in his Leçons Orales, t. ii, p. 599—612; they are full of interest. He advises that half-divided nerves should be completely divided. He is opposed to amputation as inefficacious, when Tetanus has actually commenced. He adds,—"The symptoms and post mortem examinations concur to demonstrate, that Tetanus is an essential and nervous affection, unaccompanied with any peculiar organic lesion."

1412. Blood-letting, opium, the hydrocyanic acid, tobacco, mercury, antimony; local depletion; purgative medicines; have been tried, with but occasional success. The cold bath has proved immediately fatal.

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[1] On the Brain and Spinal Cord, 2nd French ed. p. 574, 575.

[2] See also p. 848, and vol. xii, p. 15.

[3] Mémoires de Chirurgie Militaire, t. iv, p. 168.

1413. The *principles* of treatment would appear to be —1 to divide the injured nerve; 2. to subdue the spasmodic affections, by such remedies as the hydrocyanic acid; 3. to prevent organic changes in the nervous system by depletion, general and local; 4. to remove all sources of irritation, as scybala in the bowels, &c.; and 5. to avoid all sources of augmented spasm, such as shocks, noises, &c.

III. ON HYDROPHOBIA.

1414. Another terrific disease of the nervous system, arising from causes acting at a distance from the nervous centres, is Hydrophobia.

1415. I. A wound inflicted, a poison inserted, probably in the substance of the fine fibrillæ of excitor nerves, is the *Cause* of this disease.

1416. II. After a variable interval, the peculiar *Symptoms* of Hydrophobia display themselves. All these symptoms obviously belong to the true spinal or excito-motory functions: they consist in a peculiar spasmodic and terrible *dysphagia* and *dyspnœa*. The parts immediately affected are those which preside over ingestion.

1417. The fifth nerve in the face, and in the fauces, and the pneumo-gastric nerve in the larynx, appear to be most unduly impressible. The impression upon these nerves is reflected upon the muscles of the pharynx and larynx, and the sense of dysphagia, or of dyspnœa, is overwhelming. The slightest motion in the atmosphere, the application of a glass or cup to the lips, the sight or idea of water or other fluids, even, are attended by an agony of suffering,—of mingled spasm, choaking, strangulation, and terror.

1418. There are, from the first, extreme anxiety of the countenance and inquietude of manner, and a peculiar aggravation of these appearances at the sight of fluids, or on feeling a gust of air pass over the face, and still more on attempting to drink: by any of these causes, an expression of horror, a sense of suffocation, with constriction about the throat, and convulsive movements, are produced, which are terrible to witness and beyond description. Independently of these causes, there are similar symptoms, only in a minor degree. Later in the disease, the agony of expression and suffering is extreme; viscid saliva forms and collects in the mouth, and is removed with impatience and horror, and spasm about the throat; the mind begins to wander with a terrible delirium; the limbs are moved with continual spasm and agitation. At length the powers of life and of the disease sink together.

1419. M. Gendrin, in a note to his translation of Dr. Abercrombie's work, ed. 2, p. 578, observes,—"I have seen many cases of Hydrophobia, and I have been present at the dissection of the bodies of still more. A few months only have elapsed since I watched this frightful disease, from its incipient symptoms to its fatal termination. I have not seen the least trace of inflammation or of any lesion whatever in the encephalo-rachidian organs, or in the ganglionic nerves. The only disorganization that I have met with is a considerable development, mostly inflammatory, of the mucous cryptæ at the base of the tongue, the pharynx, and the upper opening of the larynx. Death in hydrophobia arises from asphyxia. On dissection, we find in this disease, as well as in tetanus, congestion, pretty well marked, of the pulmonary veins, and a general state of congestion of the principal viscera, particularly of the brain, and the blood in a liquid state, and of a dark-red colour, in the vessels[1]."

1420. III. *The Treatment* of Hydrophobia has hitherto been abortive. Every remedy which the terrors of the disease, or the ingenuity of physicians could suggest, has been tried in vain. Dr. A. T. Thomson's case was apparently mitigated by the hydrocyanic acid. Mr. Mayo has ingeniously suggested the propriety of tracheotomy. If a case were committed to my charge, I would combine these two modes of treatment. The strychnine might induce tetanus or Hydrophobia, but can never cure it, except upon a principle of similia similibus.

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[1] Abercrombie, p. 578.

1421. But the most important point in practice is to excise the part on which the bite has been inflicted, early, nay immediately, if possible, but late rather than not at all: indeed it is not too late if the symptoms have not yet appeared.

XII. DISEASES OF THE SPINAL MOTOR NERVES.

1422. Spasmodic affections may arise from causes affecting the *excitor* nerves, the *spinal axis*, or the *motor* nerves of the true spinal or excito-motory system: the first and second have been noticed already. It now remains for me to treat of the third.

I. SPASMODIC STRABISMUS.

1423. I have already noticed the Strabismus which arises from *paralysis* of cerebral and voluntary nerves, and some of the muscles of the eye-ball; § 1285. I now wish to draw the reader's attention to another form of Strabismus, not hitherto distinguished from the former, and which I believe to be an affection of the motory nerves of the true spinal system.

1424. In the former case, the patient can frequently move the eye-ball fully, in every direction except one; at a certain point the eye-ball stops, although the other eye continues to pursue an object placed and moved before it. This is the case with a patient at this moment under my care for attacks of sickness, with defective vision and motions of the eye.

1425. In Spasmodic Strabismus, the motions of the eye may be perfect, except on certain occasions of excitement, or of disorder, or of intense application or of employment of the eye; the Strabismus then becomes apparent, the eye-ball obviously is *drawn* in one particular direction.

1426. In one interesting little girl, aged about three years, the Strabismus came on whenever a stranger came into the room, whenever she was asked to read, &c.

II. SPASMODIC TIC.

1427. The next of these nerves is the *seventh* or *facial*. So long ago as the year 1817, I published, in the Edinburgh Medical and Surgical Journal[1], an interesting case, which is plainly one of spasmodic affection through this nerve:—

1428. Miss Inman, aged nineteen. Two years ago, in the winter season, the face became affected, during the course of one night, in the following manner: all the muscles of the right side of the face were drawn into a state of spasmodic contraction; the sensibility of the skin became much impaired, the contact of an external object inducing a feeling of numbness; there were a degree of swelling, and considerable pain; and a sense of rigidity was felt in the muscles of the right side of the neck.

1429. The muscular contraction was permanent, and very considerable: the right angle of the mouth was drawn downwards; the retraction of the integuments, the effect of muscular action, and usually observed extending from each nostril obliquely downwards, is, on the right side, very deeply marked; on the left, it is seen in its natural state. The tongue, when protruded, is drawn a little towards the right side; the point of the nose is considerably so. The right eye-brow is drawn a little lower down than the left one; and two small dimples, the effect and evidence of muscular contraction, are seen immediately above it. A dimple in the chin is also distinctly marked, and is drawn considerably to the right of the mesial plane of the face. Articulation was, at first, very indistinct, and is still so in some degree; the letter *S*, especially, is pronounced with difficulty, and participates in the soft sound of *th*. There is no difficulty in deglutition; but considerable inconvenience occurs during mastication, from a tendency of the bolus of food to pass and collect in the right side of the mouth. On closing the right eye, a degree of tightness is induced and felt at the right angle of the mouth; this tightness is *seen*, even, when the patient speaks with the right eye perfectly closed. On drawing down the right angle of the mouth, by an effort of the muscles of this part of the face, the upper eye-lid of the right eye is also drawn sensibly downwards, and the eye is partially closed. In the first instance the eye was closed with difficulty.

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[1] Vol. xiii, p. 63.

1430. The state of contraction of the muscles is seen much more distinctly, and the deformity induced is much greater, on speaking or laughing, than when the patient is in a state of tranquillity.

1431. At present, the contraction of the muscles is much less than at first. The sensibility is perfectly restored. The diminution of the symptoms took place during the administration of electricity, the operation of blisters, and the exhibition of an emetic, followed by purgative medicines.

1432. This affection was considered by the patient as an effect of cold. The swelling and pain were deemed an attack of tooth-ache; but without reason, as there is no decay of any of the teeth. Before and about the period of attack, pains were experienced in both arms and wrists, and were considered rheumatic. During two years previously to the accession of the affection described, this young lady had experienced some general indisposition, having been feeble, nervous, and subject to difficulty of breathing, and palpitation of the heart. The catamenia had been somewhat irregular. The ankles were affected with œdematous swelling in the evening of each day.

1433. This case is deemed particularly interesting, as it establishes a distinct diagnosis between a *spasmodic affection*, and a case, very similar in appearance, consisting of *paralysis* of one side of the face; a distinction which, it is thought, has been sometimes neglected. A further diagnosis, to which the practitioner must attend, consists in the distinction between a primary paralysis of the muscles of one side of the face, occasioned by the agency of internal causes; and a secondary paralytic affection, the consequence of pressure external to the brain.

1434. In the Annuaire Medico-Chirurgical des Hôpitaux, published in 1819, there is (p. 406) an interesting case of a wounded facial nerve:—

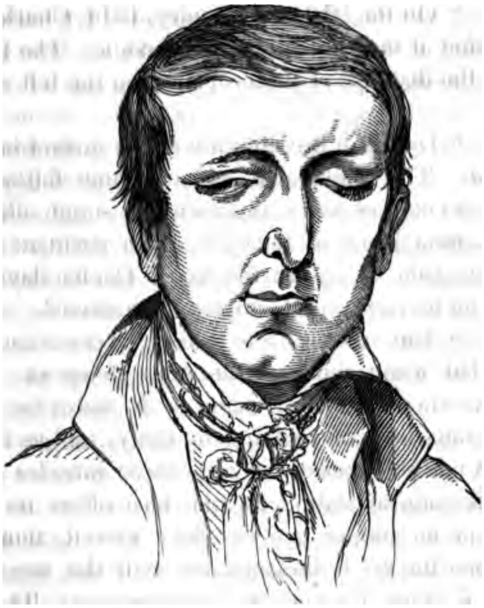
1435. " On the 27th of February, 1814, Charles Leroux was wounded at the battle of Bar-sur-Aube. The ball struck him, from the distance of fifteen paces, on the left side of the face.

1436. " He felt but slight pain at the instant he received the wound. The only consequences which followed, were a trifling swelling of the cheek, with a slight alteration in vision, shooting pains in the eyes, and a peculiar sensibility accompanying the act of mastication. Twelve days after the accident, the wounds were completely cicatrized.

1437. " The most extraordinary circumstance of this case is, that when this man attempts to speak, laugh, or eat, in fact, whenever it is necessary to move the jaws, the sub-labial muscles contract involuntarily, and as if by sympathy. While the jaws are at rest, these muscles appear to be in their natural state, and the face offers no traces of change; but no sooner are the jaws moved, though very slightly, than the act is accompanied with the most frightful grimace, of which the patient is unconscious. The countenance changes and becomes hideous, and it is hardly possible to recognize it. This alteration of the features is much greater on the left than the right side of the face. This phenomenon may, I think, be explained by the lesion of the sub-orbital nerve! With regard to the sensibility accompanying the mastication, which, a month after the accident, was still felt, it must be attributed to the passing of the ball through the sub-maxillary alveoli, and to the shock resulting from it."

1438. For my own part, I do not pretend to have understood the case, which I have given, § 1428, and which I observed and detailed merely as one of clinical observation and diagnosis. M. Beauchêne, the author of the second case, is absolutely in error in considering it as an affection of the sub-orbitar nerve.

1439. I now lay before my reader a sketch which must be compared with those given, p. 279:



1441. In this case the countenance is also drawn to the right side; but it is the eye of the *same* side which cannot be closed. It is distinguished by this circumstance. In the former case there is *paralysis* of the facial nerve of the left side. In this there is a *spasmodic* affection of that nerve on the right side. It is a peculiar affection not discriminated from the former, and will be illustrated by the following case:

1442. George Jefferson, aged forty, formerly a lamplighter, now a seller of fruit in the streets, was affected three years ago with general rheumatism, in the midst of which this singular affection of the muscles of the face came on.

1443. The two sides of the face are not alike; the left is nearly natural, but the right is affected with spasmodic contraction: the chin is drawn to one side and dimpled; the right angle of the mouth is drawn downwards; the right eye-brow is higher than the left. Sometimes there is a little rapid spasmodic action of the muscles.

1444. When he is told to shut the eyes promptly and forcibly, the distortion is tenfold: the right eye is drawn and only partially closed; the right angle of the mouth is drawn spasmodically downwards; the nose and the chin are drawn to the right side.

1445. He laughs, and bites, perfectly, on the left side. On attempting to open the mouth wide, it is obviously *tied* by the muscles of the right side. He cannot whistle; in the attempt to do so, the mouth is drawn to the right side.

1446. He takes snuff through both nostrils indifferently; on sneezing, the left side of the face is chiefly distorted.

1447. The right side is a little benumbed in feeling. It is also colder, after exposure to cold, than the left.

1448. Besides these two cases, I have seen several others: in one there was a defect of vision, with the Spasmodic Tic; in another, the tic was confined to the outer portion of the orbicularis. The former was of the most extreme character, the face being exceedingly distorted on each spasmodic attack. The latter was comparatively slight. The former probably arises from disease of the facial nerve *within* the cranium; the latter appears confined to that branch of the facial, *exterior* to the cranium, which supplies the orbicularis.

1449. The remedies for this disease are unknown. In the severer case just mentioned, aperients and mercury have been fully tried, in vain. I have proposed local depletion and counter-irritation, by means of the cupping instruments.

III. SPASMODIC TORTICOLLIS.

1450. This spasmodic affection of the sterno-cleido-mastoid muscle has long been known to physicians. It is obviously of the same character as the spasmodic strabismus, and spasmodic tic—an affection of the *true spinal motor* nerves.

1451. Sometimes the head is drawn to the shoulder; sometimes it is moved to and from one side with a rocking motion.

1452. The treatment is that of local inflammation,—leeches, counter-irritation, mercurials, aperients. It may be a question whether the branches of the accessory going to the muscle, might be divided.

IV. SPASM OF THE RESPIRATORY MUSCLES.

1453. I have recently attended a patient, a young gentleman, aged about twenty, who experiences attacks of a peculiar affection of the movements of *respiration:* he lost the power of articulation; on attempting to speak, he was suddenly seized with a spasmodic action of the diaphragm, which induced a sudden *inspiration,* with a hissing noise as the air entered through the lips, and pain in the points of attachment of the diaphragm. This affection yielded to attention to diet and to the state of the bowels.

7454. The following sketch is taken from Sir Charles Bell[1]:—

7455. " The condition of this woman is very peculiar: in her, common breathing inspiration is performed with a sudden spasmodic action: but she is also affected at intervals with more violent spasms, and her respiration is then hurried and distressing. On the commencement of a paroxysm, she bends her body slightly forwards, and thus prepares herself, as it were, for the attack: her nostrils are dilated widely, the angles of her mouth are dragged forcibly downwards, there is a constriction of the throat, and the shoulder and chest rise convulsively, as when a person has cold water poured upon the head; the inspirations are deep and violent, and are attended with a sniffing of the nostrils, the air being inhaled through them only, and not through the mouth. The fibres of the platysma myoides start into view, and there is quick rising and falling of the pomum Adami; the sterno-cleido-mastoideus and trapezius, on both sides, act powerfully, fixing the head and elevating the shoulders.

1456. " The spasmodic action of these muscles exists to a considerable degree constantly, yet it increases in paroxysms which last so severely for a few minutes that she is deprived of the power of speech, and seems to be almost suffocated. These paroxysms recur at irregular intervals. It was observed by the attendants, that when she was excited by walking about the ward or by replying to our questions, they returned more frequently.

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[1] The Nervous System, p. cxl.

1457. "She could move her head with perfect freedom when we requested her, but still the spasmodic action continued. She also raised either shoulder, or twisted her face to one side, when she was desired. This woman continued under the care of the physician for about a month, and was discharged cured."

1458. These and other affections of the true spinal *motor* nerves agree in several particulars:—1. they are usually suspended during sleep; (in this they differ from *similar* affections *excited* through the true spinal *excitor* nerves, which frequently come on during sleep:) 2. they are redoubled by any cause of mental hurry or excitement.

1459. Notwithstanding what has been said, I consider it still a question important to determine, whether any, and which, of these diseases have their origin in the excitor nerves, or in the true spinal axis?

1460. An intra-uterine affection of this part of the nervous system, is, probably, the disease termed *club-foot.*

XIII. ON DISEASES OF THE GANGLIONIC NERVES.

1461. Little is known of the diseases of the Ganglionic Nerves.

1462. I have already brought before my reader the facts relative to the effects of the division of the *fifth* within the cranium, as discovered by M. Magendie, § 1272. These facts are sufficient to prove that the *fifth*, as a Ganglionic Nerve, is the organ of nutrition of the eye, the gums, &c.

1463. The effects of the division of the pneumo-gastric on the lungs and the stomach, as demonstrated by the experiments of Dr. W. Philip and Sir Benjamin Brodie, prove this to be a secretory nerve. There are no cases on record, I believe, with the exception of a very defective one by M. Gendrin[1] in which the pneumo-gastric was distinctly affected, and in which the influence of its disorganization upon the lungs, stomach, and other internal organs was traced.

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[1] Translation of Abercrombie, ed. 2, p. 109.

1464. There is *still* an interesting inquiry open to us relative to the defective development and nutrition of the *internal organs* and *external limbs*, &c. from diseases of the internal and external ganglionic systems.

1465. Some diseases are obviously affections of the internal Ganglionic Nerves: we have *augmented action*, for instance, of the liver and kidney, in the cholera Europæa, and enuresis; we have *paralysis* of the same organs in the cholera Indica,—in some cases of icterus, and in ischuria[1].

1466. With these effects of deranged ganglionic function, I beg my reader to compare the statements § 1054, 1069, 1160.

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[1] For the influence of the Spinal Marrow on the secretion of the Urine, see Prout's Inquiry into Affections of the Urinary Organs, ed. 2, p. 180; Ollivier, Traité de la Moëlle Epinière, ed. 2, p. 118; Mr. Stanley in the Medico-Chirurgical Transactions, vol. xviii, p. 271.

☞ Just as this sheet is committed to press, I receive the 5th No. of the British and Foreign Medical Review, by Dr. Forbes and Dr. Conolly. It contains, p. 32—39, a *Review* of my "Lectures on the Nervous System and its Diseases," I believe, by Dr. Alison. It consists in a very feeble, and not very amiable attempt to deprive me of *originality* in my recent inquiries. The reader who may feel interested in the question, will find a complete reply, by anticipation, to all Dr. Alison's insinuations, in my Memoir, published in the Philosophical Transactions, for 1833, p. 659—660, and in my Lectures, Preface, p. 1 and 2. Dr. Alison's efforts are exhausted in claiming from me, and for Whytt, Monro, &c. what I have thrice in the space of thirty pages disclaimed for myself! whilst he leaves my expressed claims entirely unnoticed! The same No. contains a further *Notice* of my Lectures by another writer, p. 203—204. *It* attempts to charge my investigations, not with want of originality, but of '*correctness*!' For a reply to this gentleman, I refer, with a feeling of mingled pride and satisfaction, to the extraordinary confirmation of my views by Prof. Müller, already referred to, (p. 241, note).

CHAPTER II.

OF THE DISEASES OF THE RESPIRATORY SYSTEM.

1467. THE organs of respiration consist of the larynx, the trachea, the bronchia,—the air cells,—the cellular substance of the lungs;—the lining mucous membranes,—the nerves,—the muscular tissue,—and the investing serous membrane or pleura,—lastly, the vessels of the arterial and of the venous circulation.

1468. For the pathological character or disposition of the different tissues, I may refer to the observations made § 106–139; and for the condition of the arterial and venous systems, in the lungs and some other organs, I may refer to § 81–102. There is a part of the anatomy and physiology to which I shall have to advert, almost for the first time, in this chapter; viz. that of the muscular tissue. In the nerves (the excito-motory system), and in the muscular tissue, we have, I believe, the seat of *true Asthma;* a complaint scarcely understood hitherto, but on which I hope to throw a little light as we proceed.

1469. The diseases of the Respiratory System could scarcely be said to be understood until the ERA at which Laënnec's incomparable work appeared: the combination of auscultation and percussion constitutes the basis of the *Diagnosis;* and the pathology is scarcely less indebted to that extraordinary man.

1470. Of the Stethoscope and of Percussion a very *useful* degree of knowledge may be obtained in a few days, or a very few weeks.

1471. The stethoscope conducts sounds on two principles: the first is illustrated by placing a watch at one end of a long table and applying the ear to the other, when its tic is distinctly heard; the second is illustrated by the newly invented flexible ear-trumpet; the voice articulated in the distant funnel, is conveyed through the hollow tube into the ears. The two objects of the stethoscope are, indeed, to enable us to listen to the slight noises made in respiration without the immediate application of the ear; and to make the external meatus of the ear a continuous tube, as it were, with the larynx or actual organs of voice,—this latter object being effected whenever a cavity or enlarged bronchus exists immediately under that part of the parietes of the thorax to which the instrument is applied; or even when more deeply seated, if it be surrounded by lung made solid by inflammation, congestion, or clustered tubercles.

1472. It was admirably remarked by the late Dr. Gooch, that, in making examinations per vaginam, we have only to bear in our mind a clear idea of the anatomy of the parts, and the changes to which they are liable, to be enabled to pursue the examination with facility and satisfaction. In like manner, it is only necessary to consider what are the relative positions of the organs contained within the thorax with its parietes, to be enabled to detect, with the stethoscope, the different noises of the respiration and of the heart, and to ascertain their value as signs of health or as symptoms of disease. The student should first make himself familiar with the sounds of the respiration in health.

1473. 1. The respiration is heard to be *tubal* or *bronchial* over the larynx, the trachea, and the large bronchia situated at the root of the lungs, on applying the stethoscope over these parts respectively. It is also bronchial at the sides of the neck, and, in some degree, between the upper angles of the scapulæ.

1474. Having familiarized himself with the healthy bronchial respiration, the student will readily detect its existence, as a sort of *error loci*, in disease. It is heard, for instance, in parts in which the respiration has usually the *vesicular* character, to be described immediately, and in cases in which the lung is rendered dense and impervious to air, and a good conductor of sound, such as hepatization, congestion, hæmorrhagy, effusion into the pleura. It is heard most distinctly at the root of the lung, where the bronchia are naturally largest, and the lungs most apt to be condensed by inflammation and effusion;

and at their summit, where the bronchia are most apt to be preternaturally enlarged.

1475. 2. The respiration is *vesicular* over all other parts of the thorax,—under which the cellular substance of the lungs exists. It is heard best immediately under the clavicle and in the axilla; and it is heard, in general, in the anterior, lateral, and posterior parts of the thorax.

1476. The vesicular inspiration is rendered louder by breathing more rapidly. It is louder in infancy and early youth (then termed *puerile*) than in adult age, and in females and 'nervous' men than in others.

1477. It *becomes* puerile in cases in which one lung, or a considerable part of a lung, becomes promptly impermeable to air from acute disease; as inflammation, hæmorrhagy, tubercles, or the presence of fluid effused into the cavities of the thorax.

1478. It is plain that, when the respiration is heard all over the chest, the lungs are free from congestion, &c. and the cavities of the pleura from effusion; when it is absent from any part, then disease, or the effects of disease, exist. The student has only to familiarize himself with this idea and to listen to the thorax, with his understanding, as it were, as well as his ear. There is really no such difficulty in obtaining a *useful practical* knowledge and use of the stethoscope as is imagined by many persons. If we can hear at all, we can hear altogether. It is only necessary to know what we are listening to.

1479. It is quite obvious that if the larger and smaller bronchial tubes be either inflamed or obstructed by mucus, pus, or blood, various noises, or *rattles*, will be added to the ordinary noises of the respiration.

1480. These rattles in the larger branches of the bronchia are *sibilant*, *sonorous*, or *mucous*, when these tubes are inflamed and more or less obstructed by thickening of their mucous lining, or by unnatural viscidity or abundance of mucus. Such rattles become diagnostic of bronchitis, and denote its existence, its diffusion, &c. Sometimes the mucus, &c. is so viscid or abundant as to close the bronchia entirely, and to suspend the respiration; this is then frequently removed by a fit of coughing, with expectoration.

1481. When these rattles occupy the air-cells themselves, or the very smallest ramifications of the bronchial tubes, they are much modified, and are designated *crepitant*, *sub-crepitant*, *sub-mucous*, *&c.* Such a form of rattle exists in the earliest stage of pneumonia, in hæmorrhagy, in œdema of the lung, &c.

1482. Another form of rattle is termed *gurgling* or *cavernous*. It exists in cavities left in the lungs by the suppuration and expectoration of tubercles. It coincides with cavernous respiration, and with distinct pectoriloquy, to be noticed immediately.

1483. To the forms of respiration already mentioned, § 1471, Laënnec has further added, the "*souffle*" or *blowing*. When the patient speaks, or coughs, the air seems actually drawn from or propelled into the ear. This sign indicates a cavity, or enlarged bronchia, surrounded by condensed lung, near the parietes of the thorax.

1484. The souffle is sometimes modified by the sensation as of a *veil* interposed between a cavity and the ear—"*souffle voilé.*" This phenomenon is observed in cases in which a vomica has its parietes thin, yet unequally so, and unadherent, or an abscess has its parietes of unequal induration, or a large bronchus is surrounded by lung partly condensed and partly natural, or nearly so.

1485. *Cough*, like the respiration, is sometimes *bronchial*, sometimes *cavernous*, and is of course attended by the various rattles which have been already mentioned.

1486. When we apply the Stethoscope over the larynx, the trachea, or the large bronchia, and make the person speak, the *voice* seems to pass through the tube into the ear: it is laryngeal, tracheal, bronchial.

1487. The voice passes, in like manner, from a bronchus surrounded by lung condensed by the pressure of fluid effused into the thorax, or solidified,—'hepatized,'—by inflammation, or from a cavity formed by suppurated and expectorated tubercles, if this be situated near the parietes of the chest.

1488. In the first case it is termed *ægophony* (αἲξ, *a goat*, φωνὴ, *a voice*), from the resemblance of the sound to the bleating of a goat.

1489. In the *second* case, it is called *bronchophony*; it resembles the voice heard over the larger bronchia.

1490. In the *third*, it is designated *pectoriloquy*, and resembles the voice heard over the trachea.

1491. All this is simple; and a little attention and practice will make it easy.

1492. I have thus given a very slight *sketch* of the use of the stethoscope for the very beginners, who will now be prepared to enter into the subject a little more minutely.

1493. In reference to bronchophony, pectoriloquy, and ægophony, it may now be added that pectoriloquy differs from bronchophony by its cavernous and circumscribed character; and it occurs in all cases of cavities, resulting from softened tubercles, abscesses, &c. It is *perfect* or *imperfect*.

1494. Pectoriloquy is perfect when the voice passes through the stethoscope, from a space accurately circumscribed, and the cough, rattle, and respiration combine to distinguish the phenomenon from bronchophony. It is imperfect when some of these phenomena are wanting, and especially the transmission of the voice through the tube. Perfect pectoriloquy denotes an ample and empty cavity, situated near the surface, with dense parietes, and in communication with one or more bronchia of considerable size, unobstructed by sputa.

1495. With pectoriloquy, and especially bronchophony, *ægophony* may easily be confounded, without great care. It consists in a peculiar resonance of the voice, which accompanies or follows articulation; it seems as if an echo of the voice, of an acute, harsh, and silvery character, were heard at the surface of the lung, rarely entering, and scarcely ever traversing, the tube. It resembles the bleating of the goat, whence its name. In the vicinity of a large bronchus, bronchophony is frequently superadded.

1496. In order to hear the ægophony well, the stethoscope must be firmly pressed upon the chest, and the ear must be applied lightly. The phenomenon exists—1. in cases of *pleuritis*, acute or chronic, with a moderate effusion; 2. in *hydrothorax*. In these cases the sound on percussion is, at the same time, dull, and the respiratory murmur absent. The ægophony ceases when the fluid is either absorbed, or so augmented in quantity as to induce enlargement of that side of the thorax.

1497. Ægophony is always heard over a certain space, and often between the scapula and spine, and across the thorax to the mamma, and not, like pectoriloquy, in one part only—evidently occupying the superior border of the effusion, where it exists as a thin layer of fluid, moderately compressing the bronchial tubes. The seat of ægophony is consequently modified by the quantity of effusion, and by pleuritic adhesions; and changed by the posture of the patient.

1498. Ægophony and bronchophony are united in pleuropneumonia; and pectoriloquy may be conjoined with them in the case in which abscess is superadded.

1499. In reference to respiration, the *voice*, *cough*, &c. it may be added that these are sometimes attended by a phenomenon termed *metallic tinkling*. The sound is precisely that of a glass struck by a pin. It is heard in respiration, but especially when the patient speaks or coughs; it exists in two cases:—1. in that of effusion into the pleura with pneumothorax, and a communication with the bronchia; 2. in that of a vast cavity in the lung only partially filled with thin pus. This sign is more distinct, as, in the former case, the fistula is larger, and the quantity of air greater.

1500. Sometimes the sound is like that heard on blowing into a decanter. It is then termed *amphoric resonance.*

1501. There is another sound heard by the stethoscope in the case of *inter-lobular Emphysema:* it is that occasioned by the ascent and descent of the affected part of the lung against the pleura costalis. A similar phenomenon may exist in *Pleuritis* with moderate effusion.

1502. A very important source of the diagnosis is *Percussion*, as first particularly noticed by Avenbrugger, and then by Corvisart. The operation requires a little use. A disc of ivory, or a half-crown piece, or the fingers, may be laid flat upon the chest, or the shirt may be drawn tight over it; or the fingers may be covered with a glove; percussion is then to be gently but briskly made with the very ends of the fingers, or the Stethoscope. The next rule is to make a precisely comparative percussion of each side, and corresponding parts, of the thorax, extending the muscles. The fore part of the thorax is thrown forwards by sitting perfectly erect, the head raised, and the elbows carried backwards; the back, by bending a little, holding the head down, and bringing the arms forwards. It is useful, in obscure cases, to pass to the other side of the patient and repeat the operation.

1503. The natural sound of the thorax is clear on percussing the middle and sternal end of the clavicle; a little less so just below; a little less so still, between the *fourth* and *eighth* ribs, or in the mammary region. The sound is obscure over the liver, loud over the stomach.

1504. Under the sternum the sound on percussion is clear.

1505. In the axilla, and immediately below, the sound is clear: between the *fourth* and *eighth* ribs, laterally, the sound is clear on the left side; but sometimes obscure on the right; denoting undue elevation of the liver. Below the *eighth* rib, the left side is sonorous, the right side dull.

1506. The interscapulary space gives an obscure sound, on account of the depth of the muscles. The space immediately below the scapulæ is obscure on the right side, over the liver, and sonorous on the left, over the stomach.

1507. When the sound of the thorax is unnaturally dull, the subjacent space, instead of containing the lung permeable to air, is occupied by the lung in a state of congestion or hepatization, by serous effusion, by a tumor, &c. It is thus that *Pneumonia*, *Hydrothorax*, *Hydro-pericarditis*, *Tumor*, *Hypertrophy of the Heart*, *Aneurysm*, &c, induce dulness of sound.

1508. It is when auscultation and percussion are conjoined that each acquires its just value. Besides these two means of diagnosis of diseases of the lungs, it is frequently useful to *inspect* and even to *measure* the thorax. There is nothing, to me, more interesting than to lay bare the thorax and to watch its movements.

1509. In *Inflammation*, and in *Disease*, the movements of the thorax are observed to be variously modified, and its form changed.

1510. In *Pleuritis*, the thorax, or a part of the thorax, is kept unmoved, according as the disease is diffused or partial, and the respiration is performed by the diaphragm alone, or by one side, or by one, or several, parts of the thorax only.

1511. In *Peritonitis*, the breathing is, on the contrary, *thoracic*—the diaphragm being motionless.

1512. These modifications of the respiration are amongst the best diagnostics of *Pleuritis* and *Hepatitis*. I had noticed them before the discoveries of the Parisian school were laid open to us, in 1814; a fact of which the Records of the Royal Infirmary of Edinburgh would bear ample testimony. In more *Chronic Pleuritis*, the thorax is not only kept immoveable, but is absolutely deformed, one side or one part being drawn and fixed inwards, the shoulder depressed and fixed, and the spine distorted. This phenomenon is occasioned by the deposit of a thick layer of lymph, with the effusion of serum, and the subsequent absorption of the latter. See the wood-cut at p. 344. In excessive *Hydrothorax*, on the other hand, the thorax, or the side of the thorax, is more rounded than usual, whilst the diaphragm is weighed down. The breathing is thoracic and high; the liver is frequently felt, carried downwards, below the false ribs. The thorax may be actually measured in these cases; but an inspection is generally sufficient, and even more satisfactory. The posterior part of the chest should be viewed, as well as the anterior.

1513. In *Emphysema* there is frequently an obvious enlargement above the clavicle of the side principally affected; a fact discovered by M. Louis.

1514. It is scarcely necessary to mention that *Aneurysm* is eventually visible externally in some cases.

1515. The anatomy of these organs should be constantly borne in mind whilst we are pursuing their pathology. It presents us with a natural mode of arranging pulmonary diseases. But a still more practical mode of arrangement flows from viewing these diseases as *Acute*, *Chronic*, and *Insidious;* to this, the former is very properly made subsidiary.

I. THE ACUTE.

I. Laryngitis and Tracheitis.

  1. *Injection.* 2. *Tumidity.* 3. *Exudation.*

II. Bronchitis. Influenza.

  1. *Redness.* 2. *Slight thickening.*
  3. *Augmented and altered Secretion.*

III. Pneumonia.

  1. *Diffused.*
  2. *Lobular.*
  3. *Central.*
    1. *Congestion.*
    2. *Hepatization*
    3. *Purulent Infiltration.*
    4. *Abscess.*
    5. *Œdema.*

IV. Hæmorrhagy.

  I. BRONCHIAL HÆMORRHAGY.
  II. PULMONARY HÆMORRHAGY OR APOPLEXY.

V. Pleuritis.

  1. *Of One Pleura.*
  2. *Of Both Pleuræ.*
  3. *Partial.*
  4. *Pleuro-pneumonia.*
    1. *False Membranes.*
    2. *Serous, Puriform, Hæmorrhagic Effusion.*

VI. Gangrene (diffused).

II. THE CHRONIC.

I. Laryngitis and Tracheitis.

II. Bronchitis.

  1. *Mucous; Dilatation of the Bronchia.*
  2. *Pituitous.*
  3. *Dry; Emphysema; Asthma.*
  4. *Symptomatic.*

III. HAY-ASTHMA.

IV. PNEUMONIA.

V. PLEURITIS.

1. *Serous, flocculent, or puriform Effusion.*
2. *Effusion, with dilatation of the Chest.*
3. *Absorption, with Contraction of the Chest.*
4. *Displacement of the Heart.*

VI. GANGRENE (CIRCUMSCRIBED).

VII. EMPHYSEMA.

1. *Vesicular.* 2. *Interlobular.*

VIII. ASTHMA.

IX. ŒDEMA.

X. HYDROTHORAX.

1. *Idiopathic.* 2. *Symptomatic.*

XI. PNEUMOTHORAX.

III. THE INSIDIOUS.

I. ULCERATION OF THE LARYNX, TRACHEA, OR BRONCHIA.

II. TUBERCLES.

I. 1. *Of the Lungs.*
  2. *Of the Pleura.*
II. *Complications.*

III. MELANOSIS.

IV. ENCEPHALOSIS.

V. SCIRRHUS.

VI. CYSTS, HYDATIDS, ETC.

VII. SYMPTOMATIC AFFECTIONS.

I. THE ACUTE DISEASES.

I. LARYNGITIS AND TRACHEITIS.

1516. The profession are chiefly indebted for the knowledge of this disease, as it occurs in *adults*, to the late Dr. Baillie[1], and to Dr. Farre[2].

1517. I. *The History.* This perilous affection comes on rather insidiously, with the feelings and appearances of slight sore throat, from exposure to wet and cold. Of the three cases given by Dr. Baillie, two occurred in the persons of eminent physicians, viz. Dr. David Pitcairn and Sir John Macnamara Hayes. " They had both been more or less subject to inflammation of the thorax." Both cases, with a third, and with other slighter cases, " occurred in one season and near each other."

1518. II. *The Symptoms.* With a blush of inflammation about the fauces, there is, very soon, a sense of stricture about the larynx, and a sonorous yet hoarse respiration, voice, and cough, the inspirations being long and difficult. After another short interval, there is increased dyspnœa, with the imminent danger of suffocation, restlessness, great distress, starting of the eyes, and perhaps delirium ; with these symptoms, referrible to the larynx or trachea, there are a small pulse, paleness of the face, dilated pupils, and obvious danger of sinking of the powers of life. When the disease is seated about the rima glottidis, there is dysphagia ; when lower down in the larynx, there is still hoarseness or loss of voice ; symptoms which are absent in Tracheitis, when distinct from affection of the larynx. Generally the patient can lay his finger on the seat of the stricture and of dyspnœa[3].

1519. III. *The Morbid Anatomy.* In acute laryngitis the velum and tonsils are somewhat inflamed; the epiglottis thickened; the lining membrane of the larynx inflamed, thickened, and with puriform fluid in the sacculi; that of the trachea being also, but less, inflamed. These appearances were seen in the cases of Dr. Baillie and Dr. Farre.

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[1] Trans. of a Soc. for the Imp. of Med. and Surg. Know. vol. iii, p. 275, 1809; Works by Wardrop, vol. ii, p. 54.

[2] Med. Chir. Trans. vol. iii, p. 84, and p. 323 ; 1812.

[3] Dr. Pitcairn " had an uneasy feeling in the larynx, and wrote on a piece of paper that his complaint was croup." Dr. Farre's patient answered his inquiry respecting the seat of his suffering, " by putting his finger on the superior part of the thyroid cartilage."

1520. Such is a general view of the symptoms, &c. in Acute Laryngitis; to this view I think it most important to add an abstract of the two cases detailed by the accurate pen of Dr. Baillie[1]:—

1521. Case I.—D. P. had been subject to quinsey, which had readily yielded to bleeding, purging, and abstinence. On April 13th, 1809, he had sore throat, which appeared slight; he was worse on the 15th, and confined to bed on the 16th. "I was *sent for*," says Dr. Baillie, "at 10 p.m.; he spoke thickly in his throat, his skin was hot, his pulse frequent; he was bled by his own desire, and the blood proved buffy; he had taken opening medicine and applied a blister. *There was no suspicion of danger*. During the night the symptoms became more violent, and many leeches were applied to the throat. At 11 p.m. on the 17th, he was sitting up, but he was pale, his pulse feeble and unequal, and his voice almost lost; there was some dyspnœa, but this was without noise or spasm; he had, however, an uneasy feeling in his throat, and wrote down on a piece of paper, that his complaint was to be considered as croup; the tongue and velum were much swelled; there was great dysphagia. About 4 p.m. he was in bed, his pulse regular and not weak or frequent; he was breathing with difficulty, and was a little drowsy. *He appeared better*. About 8 p.m. he became suddenly worse, and in less than half an hour expired.

1522. "On the 19th of April, the second day after his death, about twelve o'clock, the body was examined by Mr. Brodie, in the presence of Dr. Wells, Mr. Home, and myself. The tongue was found still considerably swelled, but not in the same degree as during life, and its under surface was of a red colour. The posterior and upper surface of the tongue was also red, but in a less degree. The velum pendulum palati, and the tonsils, were inflamed, but were not much swelled. The tonsils contained no pus. The epiglottis was at least twice as thick as it is in health, and stood more erect than usual. When the inner surface of the larynx was examined, the membrane which lines it was found to be much inflamed, and somewhat thickened, and a small quantity of a thick purulent fluid was found in the sacculi laryngis. The inner membrane of the trachea was likewise found to be inflamed, but not in the same degree as the inner membrane of the larynx. The lungs were sound, but did not collapse upon taking off the sternum, and the anterior extremities of the ribs. Some slight marks of disease were found in the coats of the aorta, but these had no connection with the disorder of which the patient died."

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[1] Trans. of the Soc. for the Imp. of Med. and Surg. Know. v. iii, p. 276—284.

1523. Case II.—I. M. H. was taken ill on July 16th, 1809, called on Dr. Baillie and complained of uneasiness in the larynx; the uvula and arch of the palate appeared slightly redder than natural. The patient, however, was a good deal anxious about himself, because he had laboured under an inflammation of his throat about fifteen years before, which had nearly proved fatal. Seven leeches were applied, and an aperient given. The next day he was a little worse; but he was without dyspnœa, and the pulse was little accelerated. Twelve ounces of blood were taken from the arm, and a blister applied. During the day he was bled, at his own desire, three times, and lost between thirty and forty ounces of blood. In the evening he was still worse; his breathing was becoming laborious, and attended with a noise referrible to the larynx. An emetic, &c. were prescribed. On the morning of the 18th, he was still worse; in the evening, at six p.m. worse still, with dyspnœa and threatenings of suffocation. Ninety drops of laudanum and the warm-bath were administered during the evening. Tracheotomy was proposed. At ten he was easier. In the night time, the patient becoming much worse, Mr. Tegart, who scarcely ever left him either day or night, sent for Mr. Home and Mr. Wilson to perform the operation of bronchotomy. Mr. Wilson was out of town upon professional business, but Mr. Home came about four in the morning. The patient, however, was beginning to sink, so that no advantage from an operation was now to be expected. I was called up at five, and found the patient in a dying state. He expired at six o'clock in the morning of the 19th of July.

1524. "Early on the 20th, the body was examined by Mr. Home, Mr. Wilson, Mr. Tegart, Mr. Brodie, and myself. The posterior part of the upper surface of the tongue was a little red, but the tongue was not increased in thickness. The tonsils, and the velum pendulum palati were slightly inflamed. The epiglottis was much thickened, and stood erect, so as to leave the cavity of the larynx altogether uncovered. The inner membrane of the larynx was much inflamed and thickened, and there was a little thick purulent fluid in the sacculi laryngis. When the cut edges of the larynx, which had been slit behind, were brought in contact with each other, the cavity of the glottis was found to be almost obliterated, by the thickening of the inner membrane of the larynx at that part. The inner membrane of the trachea was likewise inflamed, but in a less degree. The lungs did not collapse upon opening the chest, but were sound in their structure."

1525. These cases are replete with interest and instruction; they teach us how insidious this terrible malady may be, and how prompt we should be in having recourse to the only mode of arresting death!

1526. Such is, perhaps, the most common form of Laryngitis and Tracheitis in *Adults*. But there are other forms which must be mentioned in this place. In different instances there are:—

1527. 1. Œdema of the glottis.

1528. 2. The effusion of mucus, of a puriform fluid, or of a concrete layer of lymph from the lining membrane of the larynx or trachea.[1] The last is shewn by the subjoined sketches:—

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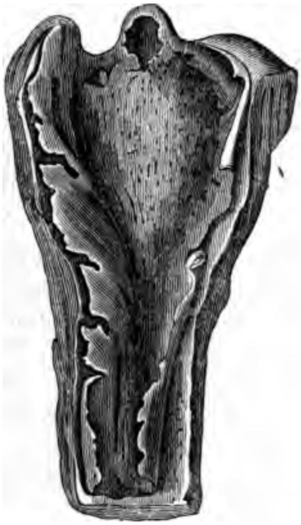
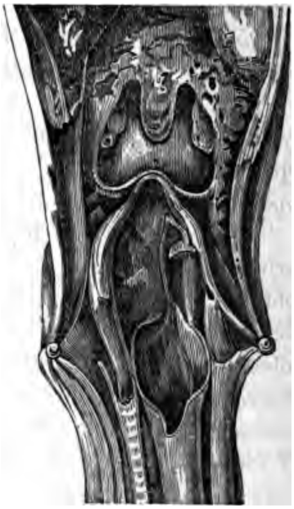
[1] Laryngitis has been distinguished by M. Blaud into three kinds or degrees, which he has designated by three terms significant enough, if they were necessary; viz. myxogene (*μύξα, mucus*), puogene (*πύον, pus*), and meningogene (*μήνιγξ, a membrane).*





1529. 3. A layer of lymph lining the nostrils, the soft palate, the tonsils, the pharynx, the larynx, the trachea. The cases detailed in the valuable Mémoire of M. Louis[1], were of this kind.

1530. 4. A *sloughy* condition of the fauces—the velum, the tonsils, &c.—an insidious and terrible disease occasionally seen in *children*.

1531. IV. *The Treatment.* In the pure form of Laryngitis and Tracheitis, we must *first* bleed promptly to incipient syncope, watching the effects and being guided in our future proceedings by the quantity of blood which has flowed: we must *next* administer mercury in such form and manner as may most speedily induce free ptyalism; the pilula and the unguentum must be administered, the former with the pulvis antimonialis: in the *third* place, we must employ local blood-letting, with fomentations.

1532. In the midst of this treatment we must be prepared to perform the operation of *tracheotomy*: this operation, to be either safe or effectual, must be performed *early*. It is

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[3] Mémoires, p. 201—252.

too late when the countenance is pallid, livid, and cold, and the pulse sinking.

1533. In œdema of the glottis the most prompt measures are required, but especially *tracheotomy.*

1534. In the case of a deposit of a layer of coagulable lymph, this is sometimes expectorated through the natural opening of the larynx, sometimes through that made by the operation into the trachea.

1535. The cases detailed by M. Louis, § 1523, occurred principally in the course of other diseases, viz. typhus, phthisis, chronic pleuritis, 'gastro-enterite.' Its treatment depends consequently upon that of the original disease. The affection was constantly observed to proceed from *above, downwards;* so that it would be most important to arrest its course by such applications as the nitrate of silver. In spite of local bleeding by leeches, and mercury, one out of eight patients only survived.

1536. In the cases of *slough,* I am led, by a recent case, to think that the quinine, promptly followed by mercury, is the remedy which affords us the greatest degree of hope of cure.

II. BRONCHITIS.

1537. I. *The History.* This disease usually succeeds to exposure to damp and cold. There is generally, at first, a state of coryza affecting the eyes and nostrils.

1538. II. *The Symptoms.* In the *mucous* form of the disease, there is a sense of irritation about the larynx and bronchia, with a dry, harsh cough; afterwards there is considerable expectoration, raised by fits of coughing; this is at first pituitous, sometimes mingled with black pulmonary matter; and afterwards, still more copious, viscid, opaque, yellowish, or greenish, and perhaps striated with blood; there is pain more or less diffused over the chest.

1539. The thorax sounds well on percussion.

1540. The degree and extent of the disease are readily ascertained by the stethoscope, being denoted by the kind and diffusion of the bronchial rattles, which pass from the sonorous to the mucous; and by the temporary diminution or partial suspension of the respiratory murmur, by the obstruction of a bronchial branch.

1541. M. Louis observes[1], "when catarrh is accompanied by sub-crepitant rattle, this rattle is always situated, *at the first* at least, at the *base* of the lungs,—that is, in a part opposed to that which is the first seat of tubercles." This is the case not only in simple catarrh, but in that form of catarrh which occurs in the course of *typhus*, *rubeola*, *emphysema*, &c. The fact affords a source of Diagnosis between these cases and phthisis, of the utmost value.

1542. III. *Varieties.* Besides the ordinary forms of acute bronchitis, some writers, in their fondness for subdivisions, have enumerated the following varieties :—

1. *The Pituitous.*
2. *The Dry.*
3. *The Suffocating.*

1543. The first and second are observed at the commencement and termination of ordinary bronchitis, and are therefore *stages*, rather than distinct forms of this disease; and the last occurs from the great extent of the disease and the accumulation of the mucous secretion, especially, but not exclusively, in infants, and in old age.

1544. IV. There is far greater susceptibility to the effects of blood-letting in bronchitis than in laryngitis or the other divisions of this sub-section.

1545. V. *The Morbid Anatomy* consists in redness, and slight thickening of the mucous membrane of the bronchia, with accumulation of its altered secretions, which retain the mucous, or assume a puriform character, or even that of solid lymph. This last appearance is represented in the subjoined cuts:

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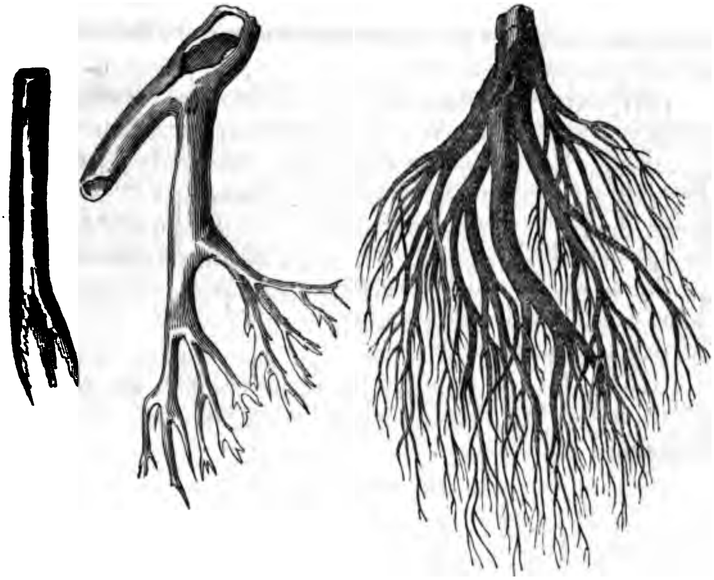
[1] Examen, p. 78.



1546. VI. *The Treatment* of Bronchitis consists—*first*, in the administration of emetic and nauseating doses of ipecacuanha, and, *secondly*, in the application of leeches, fomentations, and blisters to the thorax. The bowels should also be relieved by the oleum ricini, or the enema of warm water.

1547. General blood-letting is not, in my opinion, of great efficacy in Bronchitis; nor is it well borne. In cases in which the dyspnœa is considerable, and the patient young, we may bleed once to incipient syncope, in the erect position, and judge of the effects of the remedy on the disease, and on the patient.

1548. Squills, the balsam of copaiba, the lobelia inflata, &c. are useful auxiliary remedies.

1549. The patient should remain in bed; the atmosphere should be maintained at a moderate temperature, and free from changes or draughts, and the sole diet should be barley-water, tea, weak beef-tea, &c.

1550. We should carefully *watch* for the transition of bronchitis into *pneumonia*.

1551. There is a peculiar form of Bronchitis, which, from its being widely epidemic, has been designated

INFLUENZA.

1552. I. It is frequently diffused, not only over this country, but over the whole Continent.

1553. II. It is characterized by chills, and heat of surface; by headache, by muscular debility, by aching, weary, pains of the back and limbs, and, in a word, by many of the symptoms which characterize continued or remittent fever, of the nature of which it appears to partake. It is very apt to be complicated with pneumonia. And it leaves behind it an extraordinary debility.

1554. III. It requires all the usual remedies of bronchitis, in the first stage; and in the second, the sulphate of quinine[1].

III. PNEUMONIA.

1555. I. *The History.* The principal *cause* of Pneumonia, like that of laryngitis, bronchitis, &c. is exposure to wet and cold. Pneumonia is very obscure in its *first* stage.

1556. II. *The Symptoms* are obtuse, deep-seated pain, laboured or frequent respiration, and cough, and a *peculiar* glutinous expectoration, highly characteristic: the expectoration is frequently such, that the vessel in which it is contained may be inverted without its falling out; its colour is various, but frequently that of the *rust of iron.*

1557. But the chief sources of the diagnosis are the stethoscope and percussion:—1. The *crepitant* rattle is the invariable pathognomonic sign of the period of *congestion;* its diffusion marks that of the disease; the respiration is still heard; the chest still sounds well; 2. in the stage of *hepatization,* there is neither rattle, nor respiratory murmur; there may be bronchophony when the root, or the upper, or any exterior portion of the lung is affected; and with this sign there are always bronchial respiration and cough; the sound on percussion is dull; 3. a mucous rattle marks the flow of pus into the bronchia, in the case of suppuration.

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[1] I may refer my reader, for a full account of this singular malady, to the Medical Observations and Inquiries, v. ii, p. 187, and v. vi, p. 340; to the Transactions of the Royal College of Physicians, v. i, p. 437, v. iii, p. 54, &c. &c. See also Willan, op. cit. p. 343; Blane, op. cit. p. 227; and, lastly, the Pathologie Interne, of M. Andral, t. i, p. 321—321; &c.

1558. In order to assist the medical student, I have thought it well to give the following table of the

Signs of Pneumonia.	First Stage.	Chest still sonorous. Pain of side, if with pleuritis. Dyspnœa. Vesicular respiration becoming crepitant. Mucous expectoration.	
	Second Stage.	Dull sound on percussion. Respiration absent, or passing from the crepitant to the bronchial. Voice bronchial, or bronchophony. Expectoration yellowish, rusty, or tinged of the colour of blood; tenacious. Respiration loudly vesicular in the healthy lung, or healthy part of the lung. Posture on the back.	
	Latent in	Central Lobular	pneumonia.

1559. III. *The Complications.* The brain and its membranes are frequently congested in pneumonia; and there may be delirium or coma; the latter symptom frequently leads to a fatal termination in persons of advanced age.

1560. IV. *The Morbid Anatomy* consists of

1. *Mere Congestion.*
2. *Red Hepatization.*
3. *Grey Hepatization, or Purulent Infiltration.*
4. *Abscess.*
5. *Gangrene.*

1561. In the first of these there is much exudation of spumous fluid on incision, but no softening; in the *second* and *third*, there is much softening of the tissues of the lungs; this is so great, indeed, that the pressure of the finger has frequently produced an appearance, in the *third* case, which has been mistaken for *abscess*. Real abscess and gangrene of the *lung* are extremely rare.

1562. The disease may be circumscribed or diffused: it is frequently confined to a lobe, to the root of the lung, to lobules, &c.

1563. During the *resolution* of pneumonia, the symptoms cease in an inverted order: the sound yielded on percussion, and, first, the crepitant rattle, and then the vesicular respiration, return.

1564. If *abscess* open into the bronchia, there are pectòriloquy, cavernous respiration, cough, and rattle, and perhaps the 'soufle voilé.' If *gangrene* take place, there is expectoration of a sanious fluid, of an extremely *peculiar* odour; the same odour is also frequently diffused in the atmosphere, and becomes highly diagnostic.

1565. Sometimes pneumonia does not terminate by resolution, but gradually yields to a state of *œdema*. The symptoms are then dyspnœa, obscure respiration, and a sub-crepitant rattle.

1566. V. *The Treatment.* Pneumonia is one of those diseases which exemplify the doctrine which I have stated at large, § 353, et seq. respecting the employment of blood-letting. If this remedy be adopted *early* in Pneumonia,—if the patient be placed *perfectly* upright and bled to *incipient* syncope,—much blood flows and much benefit follows.

1567. The quantity of blood taken, the effect on the disease and on the patient, must be taken into consideration before we can determine whether in *eight*, or *twelve*, or *twenty hours*, the remedy should be re-instituted.

1568. Blood-letting holds, certainly, the *first* rank amongst the remedies of Pneumonia. The *tartrate of antimony* probably holds the *second;* see particularly § 421, et seq. The latter remedy is also extremely useful when there are some remnants of Pneumonia after blood-letting has been carried to its full extent; and when the disease supervenes upon some other affections, such as *typhus*, *variola*, &c.

1569. Ipecacuanha in nauseating doses; the squills; the lobelia inflata, &c. are important auxiliary remedies.

1570. But we possess still more important remedies in local cupping, leeches, blisters, and cataplasms or fomentations. These may be prescribed after the *general* remedies have been employed, but have failed to subdue the disease entirely.

1571. Lastly, if some part of the disease still lingers, a sharp liniment should be employed night and morning for months or even years.

1572. It may be useful to add to the value of each of these remedies by a change of climate, by a sea voyage, &c. We may thus prevent the formation of tubercles. Not less important is—a mind at ease: see § 192.

IV. HÆMORRHAGY.

1573. There are several sources of Hæmorrhagy from the lungs, or *Hæmoptysis*:—1. blood is frequently expectorated in bronchitis; it is then seen in *streaks* mingled with mucus: 2. blood is frequently expectorated in pneumonia; it is, in this case, so intimately blended with the fluid rejected by coughing, as to give it its peculiar yellow, rusty, or sanguineous hues: 3. blood is frequently expectorated in distinct portions, of various magnitude, from that of a mere *dot* or *streak*, to that of a teaspoonful, or a much larger quantity, as one of the earliest and most formidable symptoms of pulmonary tubercle.

1574. The forms of Hæmorrhagy which are to occupy us here, are those denominated *Bronchial* and *Pulmonary*.

I. BRONCHIAL HÆMORRHAGY.

1575. I. *The History*. The *causes* of Bronchial Hæmorrhagy are muscular efforts, especially of the voice[1], and of the respiration; other causes assigned are the suppression of a habitual hæmorrhagy, of the catamenia, &c.

1576. II. *The Symptoms*. Bronchial Hæmorrhagy is denoted by the rejection of a moderate quantity of spumous and sometimes coagulated blood. The chest sounds well; there is a *mucous* rattle.

1577. III. *The Morbid Anatomy*. The bronchia are found to contain more or less of blood, and to be tinged by imbibition.

II. PULMONARY HÆMORRHAGY OR APOPLEXY.

1578. I. *The History*. The causes of Pulmonary Hæmorrhagy are the same, generally, as those of bronchial hæmorrhagy. Exposure to excessive heat or cold is a frequent cause of the immediate attack. But this disease frequently occurs in the most sudden and unexpected manner. It is also sometimes coincident with hæmorrhagy in other organs.

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[1] It is said that Talma usually experienced a bronchial hæmorrhagy after performing "Les Fureurs d'Oreste."

1579. II. *The Symptoms* are oppression at the chest, cough with much irritation of the larynx, and the rejection of a considerable, perhaps an enormous, quantity of florid spumous, or coagulated blood, with a frequent vibrating pulse, and the 'bruit de soufflet' of the heart and arteries. The countenance is either flushed or pale; the skin is natural, the feet may become cold.

1580. The stethoscope affords *two* important signs of pulmonary hæmorrhagy: the *first* is the absence of respiration in some part of the chest; the *second*, a *crepitant* rattle surrounding this part.

1581. III. *The Morbid Anatomy* of pulmonary hæmorrhagy consists in solidification of the lung. This solidification is as great as that of the hepatization of pneumonia; but it is usually more partial and more distinctly and abruptly circumscribed; and it is uniformly of the deep hue of venous blood.

1582. IV. *The Treatment* 'consists in the use of the remedies prescribed for pneumonia, only in milder forms and measures.

1583. One remedy particularly useful in Hæmorrhagy, is the application of an alcoholic lotion, extensively, across the chest.

1584. The sulphuric acid; the acetate of lead; and the secale cornutum have been prescribed.

V. PLEURITIS.

1585. I. *The History*. Pleuritis, in its acute form, usually occurs rather abruptly, from exposure to wet and cold. The very first symptoms are pain and a checked respiration.

1586. II. *The Symptoms*. The pain of Pleuritis is usually distinctly fixed to a spot denoting the seat of inflammation. It is produced or augmented by free inspiration; and it produces modifications in the movements of respiration which are highly peculiar and characteristic; the thorax, the affected side, or the part, of the thorax, is unmoved, the respiration being either diaphragmatic or only partially thoracic. I have frequently been able to detect the side, or the part, affected, by watching the movements of the chest in respiration, and especially in a deep inspiration.

1587. As the usual speedy effect of Pleuritis is effusion, there is a dulness or the entire absence of sound on percussion, and there is the diminution of respiration under the ear or stethoscope: the degree of effusion is measured by the degree of diffusion of these two physical signs, which are usually greater than in pneumonia: there is another stethoscopic sign of effusion, in ægophony, which is heard when the quantity of the effusion is moderate, varying in its situation with that of the upper thin layer of the fluid, and consequently with that of the position of the patient.

1588. In the few cases in which there is no effusion, these stethoscopic signs are absent.

1589. In suspected effusion into the thorax, the parietes of this cavity may be pierced with a minute trocar; this method was proposed by me in the first edition of the Diagnosis, p. 203, in 1817.

1590. III. *The Varieties.* Pleuritis may exist

1. *In one, or*
2. *In both Pleural Sacs, or*
3. *In one part only, as*
    1. *Between the Lung and Diaphragm.*
    2. *Between the Pulmonary Lobes, &c.*
    3. *In the Mediastinum.*
4. *With Pneumonia.*
5. *With Phthisis.*

1591. When one side of the chest is affected, the pain and other symptoms are confined to that side; when both sides are affected, percussion and the ear discover the want of sound, and of respiration, equally on both sides.

1592. In partial Pleuritis, the seat of the pain and the absence of equal movement in respiration, combined with dulness of sound on percussion and want of respiration under the ear or the stethoscope, denote the particular seat of the disease. Diaphragmatic Pleuritis is denoted by a thoracic respiration and augmented pain on calling the diaphragm into play. Partial Pleuritis is denoted by absence of sound and respiration, preceded by acute pleuritic pain. Pleuro-pneumonia unites the symptoms of pleuritic and pneumonic inflammation.

1593. IV. *The Morbid Anatomy* consists of the effusion

1. *Of Organizable Lymph.* See the wood-cuts, p. 26.
2. *Of Serous, Puriform, or Sanguineous Fluid.*

1594. From Pleuritis it is highly important to distinguish the different forms of *Pleurodyne:* these are—

1. *Dyspeptic;*
2. *Chlorotic;*
3. *Hysteric;*
4. *Rheumatic;*
5. *That of Herpes Zoster, &c.*

1595. The diagnosis is founded upon the history and general symptoms of these affections respectively; and upon the absence of those of Pleuritis, and of its stethoscopic signs.

1596. The Pleurodyne of the Herpes Zoster precēdes the eruption several days, and is often sufficiently puzzling: it is characterized by being burning, stinging, and shooting, and by being recurrent; it is unaltered by a deep inspiration, motion, &c.

1597. IV. *The Treatment* of Pleuritis is the same as that of pneumonia, § 1566–1572, except that mercury occupies the important place as a remedy for this inflammation of a serous membrane, which the tartrate of antimony does for that of the lung itself. It must be given so as to induce ptyalism, and this must be kept up until the effusion shall be absorbed.

1598. If all the other remedies have failed, it may be a question whether paracentesis thoracis should be performed.

IV. GANGRENE (DIFFUSED).

1599. I. *The History.* Gangrene of the lungs is either *diffused* or *circumscribed.* In the former case, it is a disease of acute form and rapid progress. It is of rare occurrence, and generally allied to other gangrenous diseases rather than to inflammation.

1600. II. *The Symptoms* are extreme general debility and sinking, with great oppression and a frequent, feeble pulse; there is a crepitant rattle, with a peculiar and even pathognomonic expectoration of a gangrenous fœtor and dingy green colour; the rattle rapidly augments, and the patient dies from accumulation in the bronchia and sinking of the powers.

1601. III. *The Morbid Anatomy.* The substance of the lung is congested, easily torn, of the various, greenish, brownish, or blackish, hues, and of the excessive fœtor, of other parts in a state of gangrene.

II. THE CHRONIC DISEASES.

I. LARYNGITIS OR TRACHEITIS.

1602. I. *The History.* Chronic Laryngitis is sometimes insidious, sometimes the sequela of laryngitis in the acute form.

1603. II. *The Symptoms* in Chronic Laryngitis are difficult and hoarse or sonorous respiration, a croupy cough, and dysphagia; there is a sense of stricture or of soreness distinctly referred to the larynx; and there is, at length, the remarkable symptom of inability of snuffing up the nostrils, or of drawing the alæ nasi together by quick inspiration.

1604. Tracheitis is distinguished by the absence of dysphagia, and by the seat of stricture and uneasiness.

1605. I must exemplify this interesting subject by a case which occurred to me in the year 1817, and was published in the Medico-Chirurgical Transactions, vol. x, p. 166.

1606. Mrs. Ann Hatton, aged fifty-three, became affected, in the latter end of September, 1817, with hoarseness and a hard, dry cough. These two affections continued to augment in severity, without any additional symptom, during two months; when, about the 13th of November, a degree of difficulty in breathing, referred by the patient to a 'tightness in the throat,' was superadded to them, and she discovered that she was unable to 'snuff up' through the nose in inspiration, in the ordinary way. During two subsequent months the hoarseness, cough, and dyspnœa continued and increased; and about the commencement of February, 1818, she began to experience, in addition, a degree of difficulty in swallowing. In the beginning of March she observed a swelling, rather diffused, but said to have been of the size of a pigeon's egg, over the upper part of the thyroid cartilage, with an increase of the dyspnœa and dysphagia. A liniment was employed for this tumor, by which it was reduced in size, and the difficulty in breathing and in swallowing was diminished. In a short time, however, these symptoms became again aggravated, and they continued to augment until the month of August.

1607. During the course of this affection, Mrs. Hatton constantly referred the seat of the difficulty of breathing to a tightness at the upper part of the larynx. She has always been affected with cough, accompanied by a peculiar, harsh, croupy sound in the throat, at first hard and dry, but more recently attended with the expectoration of viscid mucus, tinged with blood. The dyspnœa had been constant, and lately much aggravated, precluding sleep, or putting a period to sleep by inducing a sense of impending suffocation, and rendering a raised position in bed absolutely necessary. Lately too she had suffered from fits of increased dyspnœa, threatening suffocation, obliging her to run for relief to the open window, and causing great anxiety and urgent distress.

1608. Mrs. H. applied to me on the 15th of August, 1818. She was then affected with a degree of hoarseness, which rendered the voice scarcely audible. There was a perpetual dyspnœa referred by the patient, by the noise in breathing, and by the sound of the cough, to the upper part of the larynx. She swallowed with great difficulty and effort. There was no obvious general tumefaction of the upper parts about the larynx, occupying the left rather more than the right side. She stated that she experienced great difficulty in walking up a hill, or pair of stairs. She described the impossibility of snuffing up the nostrils, an effect, I suppose, of the partial closure of the larynx; for to produce this snuffing, it is necessary that a certain *quantity* of air should be drawn through the nostrils with a certain *velocity;* and, in the present instance, the *quantity* of air admitted appears to have been too small. The patient experienced increased uneasiness on drawing the head backwards. A bougie was passed into the œsophagus, but met with no resistance.

1609. On the 15th of August, I recommended five grains of the pil. hydrarg. to be taken every night and morning, half an ounce of the sulphat of magnesia twice in the week, four leeches to be applied over the larynx every other day, and a lotion constantly, when the leech-bites were not bleeding.

1610. On the 22d of August, I again saw Mrs. H. The symptoms were unabated. The mercurial had produced no effect on the gums. Mrs. H. was now induced to remain under my immediate care. There was a degree of emaciation and debility; the pulse was rather frequent and feeble; the appetite impaired. The pil. hydrarg. was continued three times a day.

1611. On the evening of the 24th, Mrs. H. was seized with an alarming fit of dyspnœa, to which I was witness. There was the greatest anxiety of countenance and manner; and, in the breathing, every auxiliary muscle of respiration was called into exertion, and there was every appearance of impending suffocation. The dyspnœa had abated somewhat in violence, and there had been similar fits of dyspnœa before, or I should have immediately recommended the operation of laryngotomy. The difficulty of breathing abated gradually, and I left my patient in her usual state of dyspnœa.

1612. In consultation with Mr. Oldknow, a most skilful surgeon of this town, it was concluded that the operation of laryngotomy was necessary to avert the danger of suffocation, incurred during the fits of dyspnœa. The operation was therefore performed on the 25th instant.

1613. This operation afforded immediate relief to the respiration, and Mrs. H. slept soundly through the ensuing night, for the first time for a long period. Deglutition continued difficult, and always induced coughing during five or six subsequent days. The cough raised some viscid mucus, which was forced through the orifice made by the operation. The voice was quite lost.

1614. On the day of the operation the pil. hydrarg. was prescribed to be rubbed in, in the quantity of half a drachm morning and evening. The ol. ricini was ordered, to open the bowels.

1615. On the 28th the mouth became sore. Mrs. H. soon afterwards experienced a mitigation of the difficulty in swallowing; and, on applying the finger to the opening into the larynx, she found, in a short time, that the tightness in the respiration was also diminished, and that she could breathe with greater facility than before the operation, and, as she expresses it, more freely through the nose.

1616. This amendment continued progressive, and on the 5th of September, the orifice into the larynx so far closed, after an attack of sickness and retching, induced by the ol. ricini, that the air only passed through it during respiration. On the 11th, the orifice closed finally; the respiration, however, was free, the swallowing easy, and there was a slight return of voice even. On the 13th, I again heard from Mrs. H., who had returned home; the amendment continued; the mouth was extremely sore. The ung. hydrarg. was ordered to be used more sparingly.

1617. On the 22d, I paid Mrs. H. a visit. She was sitting up in bed. She breathed with perfect freedom, and had no paroxysm of augmented dyspnœa since the time of operation; she swallowed without uneasiness or effort, and, as she said, as well as ever; the whisper had advanced to a hoarse voice; and she could snuff up the nose with the usual force. Speaking, however, still required much effort, from the remaining hoarseness; and, in swallowing, the skin just above the cicatrix was drawn into wrinkles, being raised by its adhesion to the thyroid cartilage. The tumefaction about the larynx had disappeared. There was scarcely any cough, and but the scanty expectoration of a little mucus. The general appearance, strength, and appetite, were improved. She could lie down, and slept the night through. The mouth was better, but still affected by the mercury.

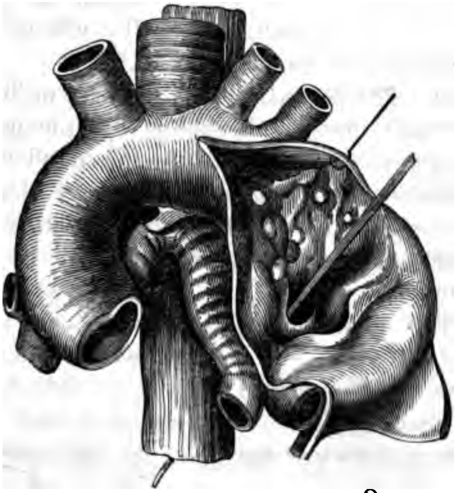
1618. October the 27th. Soon after the date of the last report, Mrs. H. imprudently left her bed-room, and exposed herself to the draughts of air in a room with three doors. She appeared to take cold in consequence, and a degree of difficulty of deglutition, and a loss of the voice formerly regained, were the effects. She came once more to Nottingham; she was once more put upon a course of the ung. hydrarg.; and, in proportion as this remedy induced ptyalism, the dysphagia disappeared entirely, and the voice became again improved. To-day, two months after the operation, she only suffers from the effect of the mercury on the mouth; the respiration and the swallowing are quite natural, and the general health and appetite are good. She returns home, with the recommendation to continue the use of the ung. hydrarg. for a time, to put on flannel, and cautiously to avoid exposure to cold.

1619. This state of amendment still continued on the 16th of December, and on the 29th of April, 1819, when Mr. H. called to give the most satisfactory account of Mrs. H.'s recovery and general health.

1620. III. *The Diagnosis.* It is important to bear in mind that Chronic Laryngitis or Tracheitis may be supposed to exist when, in fact, the case is *Hysteria*, or the trachea is compressed by

1. *A Tumor,*
2. *An Abscess, or*
3. *An Aneurysm!*

1621. This will be understood by inspecting the relative position of the parts in the subjoined wood-cut:—



1622. The young physician, being aware of the danger of this mistake, will seek the diagnosis in the symptoms peculiar to these diseases.

1623. IV. *The Morbid Anatomy* consists in thickening of the mucous membrane lining the larynx or trachea, sometimes with effusion from its surface, or œdema of the subjacent cellular substance. This is frequently increased bronchial secretion, or pulmonary œdema.

1624. Chronic Bronchitis is sometimes, although far less frequently than Ulceration of the Larynx, associated with *Tubercles.*

1625. V. *The Treatment* is admirably illustrated by the case detailed § 1606,— speedily to affect the mouth with *mercury. Tracheotomy* must be performed *early*, if there be suffocative attacks of dyspnœa. Leeches, blisters; ipecacuanha, or antimony; the hyoscyamus; the oleum ricini as an aperient; will be valuable auxiliary remedies. Fomentations and cataplasms, and the inhalation of the vapour of hot water, also relieve exceedingly.

1626. Moisture, with a regulated temperature in the atmosphere; demulcent fluids for diet; &c. are also important remedies.

II. BRONCHITIS.

1627. I. *The History.* Chronic Bronchitis is usually the consequence or issue of an acute attack of this disease. It may exist with, or without, fever. It is a frequent disease of old age; sometimes its simple effect.

1628. II. *The Symptoms* are those of ordinary bronchitis protracted: there is the absence of the pectoriloquy and cavernous respiration of phthisis; the sound of the chest and of the respiration is unimpaired. There is a degree of pallor, and frequently weakness and emaciation; dyspnœa is easily induced by exertion, or there may be confirmed dyspnœa.

1629. The expectoration is very various, in different cases and at different periods of the same case: generally copious, it is sometimes so much and so suddenly so as to lead to the erroneous idea of a ruptured abscess; it is frequently opaque, and greenish from the admixture of black pulmonary matter; occasionally it is fœtid, and more of a gangrenous odour; it is sometimes mixed with blood.

1630. III. *The Varieties.* Besides the common or mucous form of Chronic Bronchitis, there are several others to which it is necessary to advert briefly in this place: they are—

1. *The Pituitous.*
2. *The Dry.*
3. *That with Dilated Bronchia.*
4. *That with Dilated Air-cells, or Emphysema.*
5. *The Symptomatic.*

1631. The first of these is distinguished by the peculiar expectoration; the second by the want of it, with peculiar sonorous rattles; the third by bronchial respiration and bronchophony. The symptoms of emphysema, and of the diseases of which Bronchitis may be sympathetic, will be detailed hereafter.

1632. The sympathetic forms are traceable to other diseases, of the *lungs*, of the *heart*, of the *liver*, &c.

1633. Besides these forms of Bronchitis, there are others still, which I need but enumerate in this place: they are those attended with

1. *Polypi.*
2. *Ulcers.*
3. *Diseased Cartilages.*
4. *Diseased Bronchial Glands.*

1634. IV. *The Morbid Anatomy* is similar to that of acute bronchitis: the bronchia and the air-cells are sometimes dilated.

1635. V. *The Treatment* of Chronic Bronchitis consists in the administration of mercurials, antimonials, the balsam of copaiba, &c. I have experienced great advantage from pills containing a grain of ipecacuanha, three of the pilula aloës et myrrhæ, and of the pilula scillæ, and of the extractum hyoscyami, given every night, or night and morning. The *persevering* use of fomentations, and especially of liniments, applied to the anterior and posterior parts of the thorax, is also extremely valuable.

III. HAY-ASTHMA.

1636. There is a form of Chronic Bronchitis which occurs in the hay-season, or at least in summer, which has been termed *Hay-Fever*, or *Hay-Asthma*, and by Dr. Bostock, who has suffered himself from this malady, *Catarrhus Æstivus.*

1637. It consists in an inflammatory state of the conjunctiva, and the mucous membrane lining the nostrils, and the air-passages in general. It is attended by sneezing, cough, dyspnœa, &c. in exacerbations.

1638. It is relieved chiefly by change of air, especially that by the sea-coast. Ordinary remedies have little efficacy in subduing this disease[1].

IV. PNEUMONIA.

1639. I. *The History.* Chronic Pneumonia is rare, and generally a sequela of the acute form of the disease, or of pulmonary hæmorrhagy.

1640. Chronic Pneumonia is generally a sequela of the acute form of this disease, or of pulmonary apoplexy.

1641. II. *The Symptoms.* It is marked by the same symptoms and signs as the acute pneumonia.

1642. As pleuritis is frequently confounded with the Pneumonia, there is, occasionally, the noise induced by the contact and rubbing together of the two adjacent portions of the pleura in respiration. I have observed another phenomenon in this disease, which may serve to distinguish it from pleuritic effusion: the intercostal spaces drawn inwards at each inspiration.

1643. Pleuritic effusion frequently presses down the liver below the edges of the false ribs; Chronic Pneumonia is apt to induce congestion and enlargement of this organ.

1644. III. *The Morbid Anatomy* consists in the *red induration* or *hepatization.*

1645. IV. *The Treatment* consists in the careful administration of mercurials and antimonials; in the local application of a seton, a liniment, fomentations, cataplasms, &c. and, especially, in a voyage to the West Indies.

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[1] There is a full account of this singular affection, by Dr. Bostock, in the Transactions of the Medico-Chirurgical Society, vol. x, p. 161, and vol. xiv, p. 437.

1646. Aperients relieve the liver; diuretics tend to prevent the supervention of anasarca.

V. PLEURITIS.

1647. I. *The History.* Chronic Pleuritis, far more common than chronic pneumonia, occurs in feeble or cachectic subjects, and may possess its chronic form from the beginning; or it may be the sequela of acute pleuritis.

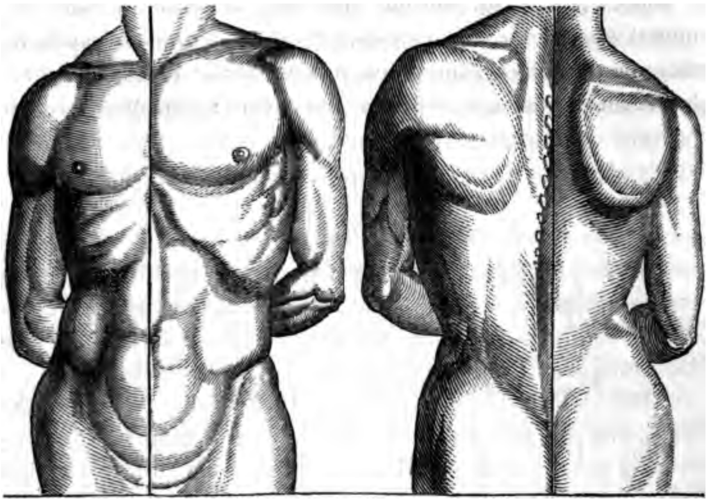
1648. II. *The Symptoms.* In Chronic Pleuritis the symptoms are generally such as denote a profuse effusion: there is the want of sound on percussion and of respiration under the ear or stethoscope; pleuritic pain and ægophony are rare; but, on the other hand, an enlargement of the side of the thorax is not uncommon. There are fever, emaciation, and cough, with mucous or even puriform expectoration.

1649. III. In the course of this affection, when it proves fatal, the following *Complications* occur:—

1. *Congestion or Effusion within the Head.*
2. *Anasarca; especially of the Arm, and Leg, of the side affected.*

1650. IV. *Varieties.* In the case which has been described, there is, when the effusion is very great, *dilatation of the thorax:* in other instances, the effusion is slowly absorbed, but the lung, bound down by strong layers of lymph, does not expand; *the thorax is,* therefore, *contracted.*

1651. Both these states are determined by the eye, and by admeasurements. Contraction of the thorax is well depicted in the subjoined wood-cuts, taken from Laënnec:



In a third case, the *heart* is *pushed* or *drawn* from its natural position.

1652. V. *The Morbid Anatomy* is similar to that of acute pleuritis: the effusion is generally more abundant; frequently flocculent, or puriform; and sometimes of a slightly disagreeable odour. In contraction of the chest, the lung is bound down by lymph, and carnified.

1653. VI. *The Treatment* of Chronic Pleuritis consists almost entirely in *topical* applications to the affected side,—a seton, a liniment, fomentations, cataplasms, the occasional application of leeches or of the cupping instrument.

1654. To these remedies, mercurials must be cautiously added.

1655. *The* remedy, par excellence, as in so many other diseases of the chest, is a voyage to the West Indies.

VI. GANGRENE (CIRCUMSCRIBED).

1656. I. *The History.* Diffused gangrene is rapid, the circumscribed very slow in its course.

1657. II. *The Symptoms.* The peculiar greenish or brownish expectoration, of gangrenous odour, is the pathognomonic symptom. With it there are, pectoriloquy, and cavernous respiration, rattle, and cough.

1658. III. *The Morbid Anatomy* is similar to that of diffused gangrene: it is circumscribed, sometimes affecting a tuberculous cavity; sometimes involving and destroying the pleura and opening a communication with its cavity.

VII. EMPHYSEMA.

1. *Vesicular Emphysema.*

1659. I. *The History.* This disease is most frequently the *issue* of repeated attacks of that form of *bronchitis* termed the *dry;* it also frequently *constitutes* the disease termed *asthma;* and, in its turn, it frequently *causes* hypertrophy or dilatation *of the heart.*

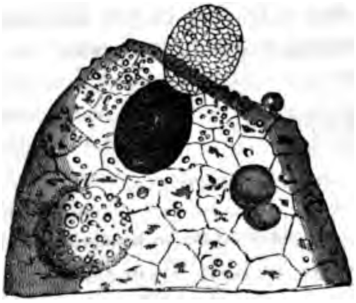
1660. II. *The Symptoms.* Emphysema is the most frequent of the varied forms of disease to which the designation of *asthma* has been given: its principal symptom is, as that name imports, great dyspnœa; this dyspnœa recurs in paroxysms and becomes more and more habitual or permanent; there is a dull-sounding cough, at first dry, afterwards with expectoration; the chest is large and elevated; the complexion becomes dingy, the lips livid.

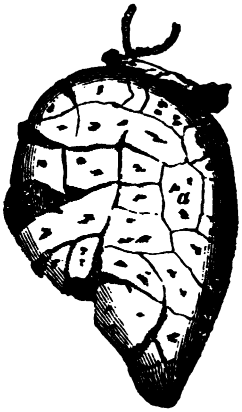
1661. These symptoms may well lead to the suspicion of Emphysema; the pathognomonic *signs* are afforded by percussion and auscultation: the chest sounds remarkably well; the respiration is scarcely audible; there is sometimes a crepitant rattle, not constant, but during short spaces of time, which differs from that of pneumonia by communicating the idea of dryness.

1662. Vesicular Emphysema may be extended to both lungs, or confined to one.

1663. III. *The Morbid Anatomy* consists in the dilatation of the air-cells: this is sometimes visible, sometimes invisible, externally; sometimes the dilated cells are prominent, and sometimes even globular, with a narrow attachment only. Sometimes the textures break, and there is Emphysema of the cellular membrane, or interlobular emphysema.

1664. The vesicular and interlobular Emphysema are represented and contrasted in the subjoined wood-cuts:—





1665. *The Treatment.* Much *relief* is obtained from the remedies prescribed for chronic bronchitis, § 1635.

2. *Interlobular Emphysema.*

1666. This form of the disease arises from violent efforts, consists in the ruptured cells of the lobules, and true *inter*lobular Emphysema, and is denoted by the crepitant rattle ' a grosses bulles,' and by the noise of ascending and descending friction against the adjacent pleura; there is sometimes external Emphysema.

VIII. ASTHMA.

1667. Besides those forms of dyspnœa consequent upon the dry bronchitis, and attendant upon emphysema (§ 1659), there is a morbid affection which more distinctly claims the designation of *Asthma.*

1668. I. *The History.* This affection occurs generally in the recluse and sedentary: college and studious habits induce it; so do the modes of life of tailors, shoemakers, &c. It is usually conjoined with symptoms of the acute dyspepsia. One gentleman experienced attacks of dyspnœa on inhaling the atmosphere in which a vial of ipecacuanha had been merely opened. Another has his attack, if he attempts to sleep in a room higher than the ground-floor.

1669. II. *The Symptoms.* There are *attacks* of extreme and urgent dyspnœa, recurrent at, or soon after, midnight: strong, brief efforts to inspire are followed by longer, laboured, and wheezing expirations; there is a dry, sounding cough, at first without expectoration; there is no fever, pain, or frequency of the pulse; but terrible anxiety and distress; the breath is tainted, and there is generally much flatus.

1670. III. *The Treatment.* An emetic of ipecacuanha, the warm water enema, § 447, 610, and fomentations, afford relief in the attack. Galvanism has also proved useful.

1671. Several patients have recovered by attending to the general health, and have been for years free from Asthma. The remedies mentioned § 1632, are again useful.

IX. ŒDEMA.

1672. I. *The History.* Œdema is rarely an *idiopathic* disease. It is, on the contrary, generally a *complication* or *sequela* of

1. *Protracted Fevers.*
2. *Disease of the Heart.*
3. *Pneumonia.*
4. *Bronchitis, especially the Pituitous.*
5. *Other Dropsies, &c.*
6. *Loss of Blood.*
7. *Chlorosis.*

1673. II. *The Symptoms* are dyspnœa, slight cough, and aqueous expectoration. The stethoscope affords two signs of this disease: a diminished respiration, and a sub-crepitant rattle.

1674. III. *The Morbid Anatomy.* The lung is dense, and at once crepitant and retaining the impression made by the finger; on making an incision, there is a copious flow of limpid fluid.

1675. IV. *The Treatment* consists in gentle tonics and stimulants, and the remedies mentioned § 1645.

X. HYDROTHORAX.

I. *Idiopathic Hydrothorax.*

1676. This affection is extremely rare. It usually exists on one side alone, and then this side is larger than the other. The symptoms are precisely detailed § 1648, as denoting effusion in pleuritis.

2. *Symptomatic Hydrothorax.*

1677. This affection is as common as the idiopathic is rare. It may be the effect of all diseases, towards their close, acute or chronic; but it is chiefly so, of

1. *Diseases of the Heart.*
2. *Diseases of the Lungs.*
3. *Diseases of the Liver.*

It frequently exists on both sides of the thorax. Its symptoms are similar to those described § 1587, 1648.

1678. *The Treatment* consists in remedies for the original disease, diuretics, paracentesis (?), &c. This last remedy is adopted only when absolutely necessary from the urgency of the dyspnœa.

X. PNEUMOTHORAX.

1679. Pneumothorax may exist under the following forms:—

1. *The Simple.*
2. *Complicated with Pleuritic Effusion.*
3. *Complicated with a Fistulous Communication with the Bronchia.*
4. *The Double.*

1680. I. *The History.* This disease, when simple, most frequently occurs with pleuritis, in cases of phthisis. It may be simple, or complicated with effusion, or with a communication with the bronchia by means of a softened tubercle. It may be the result of the effusion and decomposition of blood, or the consequence of circumscribed gangrene.

1681. II. *The Symptoms.* There is dyspnœa, and the side affected is generally enlarged. But the true diagnostics are derived from a comparison of the effects of percussion and of auscultation: one side of the thorax sounds better than the other, whilst the respiration is inaudible, except at the root of the lung, being audible at the side least sonorous. When effusion is added to the pneumothorax, there is dulness of sound on percussion of the lowest part of the chest, and a fluctuation is heard when the patient changes his posture rapidly. If there be a fistulous communication with the bronchia, there is metallic tinkling, or amphoric resonance.

III. THE INSIDIOUS DISEASES.

I. ULCERATION OF THE LARYNX, ETC.

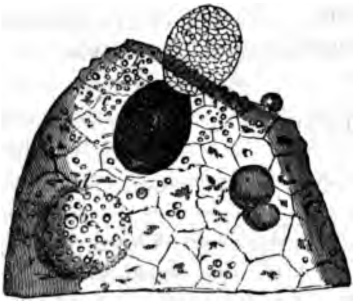
1682. I. *The History.* This affection is of the most insidious character, and generally occurs without any obvious external cause.

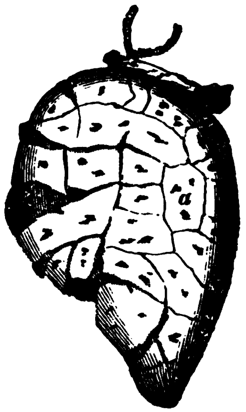
1683. II. *The Symptoms* of Ulceration of the Larynx are hoarseness, and hoarse cough, with the expectoration of mixed, limpid, and puriform mucus, frequently dotted or streaked with blood. The hoarseness, cough, and expectoration augment. Difficulty or imperfection in swallowing is added to the other symptoms: the patient frequently becomes choaked in the act of deglutition, or the food is propelled through the nostrils.

1684. Hectic and emaciation eventually take place, frequently with all the symptoms of phthisis.

1685. III. The most important *Diagnosis* in practice is that between ulceration and chronic inflammation of the larynx: the former is always *tuberculous,*—or syphilitic: in ulceration, there are loss of voice, hoareness, hoarse cough, imperfect deglutition, frequent pulse, *hectic:* in inflammation, a sense of constriction, croupy cough, attacks of dyspnœa, &c.

1686. IV. *The Morbid Anatomy* combines ulcerative destruction of some parts of the larynx, with tubercles of the lungs and frequently of other organs.





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1675. IV. *The Treatment* consists in gentle tonics and stimulants, and the remedies mentioned § 1645.

II. TUBERCLES.

1687. I. *The History.* Phthisis is usually very insidious, slow, and gradual in its progress and termination. In other instances its commencement and progress are more rapid, and its termination may be sudden and unexpected in any period of its course. The exciting causes are sometimes undetected; in other instances, exposure to cold, the debility left by some acute disease, by mercury, &c. are its obvious causes. Phthisis is distinctly an hereditary or family disease; it is also an effect of scanty or impure nourishment.

1688. II. *The Symptoms.* The general symptoms of tuberculous diseases have been already fully detailed, § 229—239, and the local symptoms of Phthisis, § 232. To the account there given I may add, that a slight cough, a slight shortness of breath on moving quickly or ascending the stairs, —an expectoration with a *dot* or *streak* of blood,—a little appearance of pallor, or thinness,—a pulse of 90 when the patient is asleep, or at least quiet in bed, are, with hereditary predisposition, a glandular enlargement, &c. amongst the first symptoms of this insidious disease, any one of which should *excite* our immediate attention, if not our alarm.

1689. The *Local Signs* vary with the stage and state of the pulmonary disease. This may subsist in the following forms:—

1. *Tubercles.*
    1. *Crude.*
    2. *Softened.*
2. *Excavation.*
    1. *Small.*
    2. *Large.*
    3. *Superficial.*
    4. *Deep-seated.*
    5. *Bursting into*
        1. *The Bronchia,*
        2. *The Pleura.*

1690. 1. In accumulations of the crude tubercles, there is occasionally a perceptible diminution of sound on percussion, and diffuse bronchophony, especially immediately under the clavicle and in the axilla, and especially on the right side.

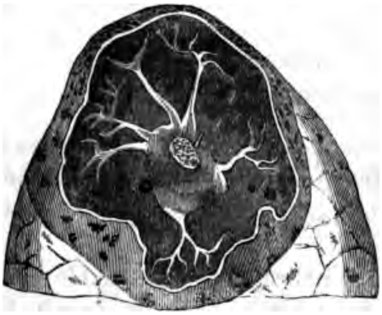
1691. 2. As the tubercles soften, a gurgling is heard, a mucous rattle is gradually established, and the cough becomes cavernous.

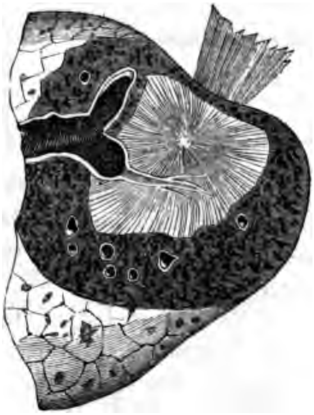
1692. 2. As a cavity forms, and becomes emptied, the respiration and rattle become cavernous, and the bronchophony passes into pectoriloquy, at first imperfect, and then more evident; and the sound of the chest may sometimes, though but rarely, become clearer. Pectoriloquy is a most distinct diagnostic: it may be perfect, imperfect, or doubtful, intermitting or permanent. When the cavity is superficial, there is sometimes the sound of cracked porcelain,—the "bruit de pot fêlé."

1693. When the cavity is extremely large, there is no pectoriloquy; but the voice, cough, and respiration are attended by the amphoric resonance, and sometimes there is the metallic tinkling.

1694. When the cavity suddenly bursts into the bronchia, there is the sudden expectoration of a large quantity of puriform fluid: when it bursts into the cavity of the pleura, there is frequently sudden, acute pleuritis, and, more remotely, pneumothorax. § 1655.

1695. The usual appearances of the cavity in phthisis, and of the subsequent cicatrix when this cavity happily closes, are given in the subjoined wood-cuts.





1696. III. *The Complications* of Phthisis present a most interesting subject for enumeration: they may be divided into several classes. The *first* is nearly peculiar to Phthisis, and embraces—

1. *Ulcerations of the Epiglottis, the Larynx, and the Trachea;*
2. *Ulcerations of the Clustered and Solitary Glands of the Ileum and Colon;*
3. *The Fatty Enlargement of the Liver.*

1697. The *second* class consists of lesions which are only extremely frequent, and not peculiar to Phthisis; they are—

1. *Pleuritis.*
2. *Pneumonia.*

1698. There is a *third* class of complications of Phthisis, less frequent; this consists of—

1. *Inflammation of the Arachnoid, or of the Substance of the Brain, with Effusion, or Softening.*
2. *Inflammation and Softening of the Mucous Membrane of the Stomach, or Colon.*

1699. The *fourth* consists of—

1. *Tuberculous Inflammation of the Pleura, Peritonæum, &c.*
2. *Tuberculous Inflammation of the Lymphatic Glands, especially the Mesenteric, those of the neck, &c.*

1700. The *fifth* class consists of—

Serous Effusions into—1. *The Ventricles.*
2. *The Pleura.*
3. *The Pericardium.*
4. *The Peritonæum.*

1701. To complete the view of this subject, it is necessary to add that the heart is sometimes softened, and that the aorta is found red in the young, and more deeply altered in older subjects.

1702. This list of the complications will enable the young physician to anticipate, and to obviate lesions which may, even amidst a disease almost always fatal in itself, fearfully tend to shorten the patient's few remaining days. See further, § 208.

1703. IV. *The Morbid Anatomy* of Phthisis consists in the different forms and conditions of tubercles; of the cavities left by their softening and expectoration; and of the adjacent portions of the lung and pleura.

1704. V. *The Treatment* of tubercle in general has been sketched already, § 240.

1705. Every means which gives health and tone to the general system: a mild *meat* diet; a regulated state of the bowels; sponging with salt water; ample clothing, and then a free exposure to the open air, the sea-breezes, &c.; early hours; cheerful society; travelling; sea-voyages; a warmer, serener climate, &c. are amongst the most important measures to be adopted early in this disease.

1706. Such mild measures as induce counter-irritation over the chest, as a sharp liniment; cupping or leeches if there should be pleuritic pain; a small blister if there should be dyspnœa; an alcoholic lotion (§ 1583) composed of one ounce of alcohol and three, four, or five, of rose-water, if there should be hæmorrhagy,—are important auxiliary topical remedies.

1707. Opiates for cough or diarrhœa; the dilute sulphuric acid for profuse perspiration; the sulphate of quinine for chilliness; are other remedies to which we must frequently have recourse in the late stages of the disease.

1708. The inhalation of chlorine, the administration of iodine, have been much used recently. I have never seen any advantage from them.

III. MELANOSIS.

1709. The *general Symptoms* of Melanosis have been noticed § 253. Instead of the *hectic* and *emaciation* of pulmonary tubercles, there is a disposition to *cachexia* and *anasarca.*

1710. The stethoscopic *signs* are the same as those of unsoftened tubercles; § 1689: cavities are rarely formed in Melanosis.

IV. ENCEPHALOSIS.

1711. The *general Symptoms* of this disease have been detailed, § 269.

II. TUBERCLES.

1687. I. *The History.* Phthisis is usually very insidious, slow, and gradual in its progress and termination. In other instances its commencement and progress are more rapid, and its termination may be sudden and unexpected in any period of its course. The exciting causes are sometimes undetected; in other instances, exposure to cold, the debility left by some acute disease, by mercury, &c. are its obvious causes. Phthisis is distinctly an hereditary or family disease; it is also an effect of scanty or impure nourishment.

1688. II. *The Symptoms.* The general symptoms of tuberculous diseases have been already fully detailed, § 229—239, and the local symptoms of Phthisis, § 232. To the account there given I may add, that a slight cough, a slight shortness of breath on moving quickly or ascending the stairs, —an expectoration with a *dot* or *streak* of blood,—a little appearance of pallor, or thinness,—a pulse of 90 when the patient is asleep, or at least quiet in bed, are, with hereditary predisposition, a glandular enlargement, &c. amongst the first symptoms of this insidious disease, any one of which should *excite* our immediate attention, if not our alarm.

1689. The *Local Signs* vary with the stage and state of the pulmonary disease. This may subsist in the following forms:—

1. *Tubercles.*
    1. *Crude.*
    2. *Softened.*
2. *Excavation.*
    1. *Small.*
    2. *Large.*
    3. *Superficial.*
    4. *Deep-seated.*
    5. *Bursting into*
        1. *The Bronchia,*
        2. *The Pleura.*

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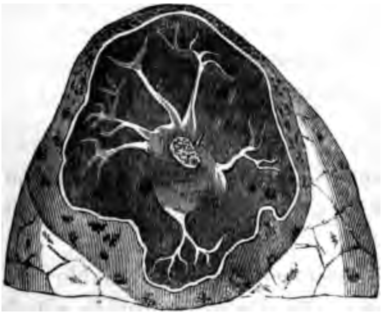

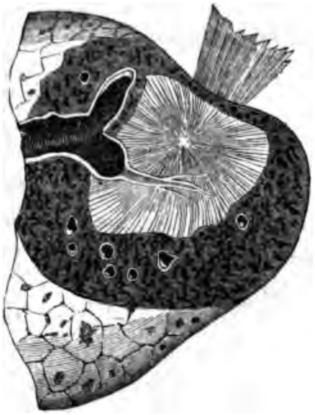

1696. III. *The Complications* of Phthisis present a most interesting subject for enumeration: they may be divided

1712. The *local Symptoms* are dyspnœa and cough, sometimes with expectoration. This disease generally occasions death by pressure and suffocation, before any extraordinary emaciation is induced. At length there are emaciation and dropsy.

1713. The case may be mistaken for tracheitis, or bronchitis, when the tumor presses upon the windpipe or bronchia; or for aneurysm, when it is seated so as to receive an impulse from an adjacent artery.

1714. When the tumor has attained a certain size, there is the absence of respiration under the stethoscope, and of sound on percussion.

V. SCIRRHUS.

1715. It is only necessary to refer to the general symptoms of Scirrhus, given § 323.

VI. CYSTS, CEPHALOCYSTS, ETC.

1716. *The Symptoms* of Cysts, or of Hydatids, are dyspnœa and cough; when these bodies are near the surface of the lung, there is absence of sound on percussion, and of respiration under the stethoscope.

IV. SYMPTOMATIC AFFECTIONS.

1717. Before I dismiss the subject of the Diagnosis of Diseases of the Chest, I must once more advert to the several *symptomatic* affections which require to be distinguished from them: they are

1. *Hysteric Croup.*
2. *Hysteric Pleurodyne.*
3. *Chlorotic Pleurodyne.*
4. *Dyspeptic Asthma.*

1718. *Hysteric Croup* is so similar, in some instances, to acute laryngitis, and suffocation has been apparently so imminent, that the surgeon has been on the point of performing the operation of tracheotomy! This operation is particularly noticed by Sir Charles Bell, in his 'Reports,' which it is much to be regretted that he has left unfinished. By *waiting* and *watching*, the case is unveiled by the occurrence of some unequivocal symptoms of hysteria.

1719. *Hysteric Pleurodyne* is amongst the most acute pains of the chest. The surface of the skin is even sensitive to the touch. It is distinguished by the character of hurry, and other symptoms of hysteria. It is only necessary to put the young physician on his guard in regard to it.

1720. *Chlorotic Pleurodyne* is sometimes so like chronic pleuritis, that I have known patients to be bled and blistered for the *twentieth* time, under this erroneous impression. In this case, the history, the general symptoms, and the stethoscope, with percussion, will enable the *attentive* practitioner to institute the due diagnosis.

1721. *True Asthma* arises, I believe, generally, from dyspepsia. It is distinguished by the history, and general symptoms, by its peculiar sudden attack, and by being unpreceded by dry bronchitis, or other diseases within the thorax.

CHAPTER III.

OF THE DISEASES OF THE CIRCULATING SYSTEM.

1722. IN treating of the Diagnosis of the Diseases of the Heart and large Arteries, it will be my object, as usual, to select all the really important and practical distinctions, whilst I avoid the useless minutiæ with which this subject has been encumbered.

1723. The most frequent diseases of the heart are *dilatation* and *hypertrophy* of the *ventricles*, *single*, or *variously combined.*

1724. The diseases of the heart next in frequency, are *ossification*, or excrescences, of the *valves of the aorta*, or of the *mitral valve:* these generally induce, eventually, hypertrophy or dilatation of the ventricles.

1725. Next follows *hypertrophy*, or *dilatation*, *of the auricles*, of still more rare occurrence, and usually consecutive to disease of the valves or ventricles.

1726. This abstract will enable the young student to form distinct ideas of the diseases of the heart of most usual occurrence: *pericarditis* and *hydropericarditis*, and *aneurysm of the aorta* and *large arteries*, must be added, and the list of diseases of the heart and large vessels is nearly complete.

1727. One of the most important applications of the stethoscope is to ascertain the condition of the *heart* and *large vessels*. The beat of the heart must be examined in regard—1, to its *diffusion* over the thorax ; 2, to its *impulse;* 3, to its *sounds;* and 4, to its *rhythm*.

1728. In the healthy state, the sound of the heart is more or less confined to the space between the cartilages of the *fourth* and *fifth* ribs of the left side, and at the bottom of the *sternum;* in which points the left and right sides of the heart are heard respectively. In thin persons and children it is heard under the clavicles.

1729. When the extent of the beats of the heart is augmented, they are heard in the following spaces:—1, along the *left* side of the chest from the axilla downwards; 2, along the *right* side; 3, along the *back* of the *left* side; 4, along the *back* of the *right* side.

1730. The degree of diffusion of the beat of the heart is proportionate to the thinness of its parietes, the feebleness of its contractions, and to the size of the organ.

1731. The *impulse* of the heart is inversely as the diffusion of its beat, and directly as the *thickness* of the organ. Augmented impulse is therefore the sign of *Hypertrophy;* diffusion of the sound, with the absence of impulse, the sign of *Dilatation.*

1732. The *sound* of the heart is double, consisting of a *first,* dull and prolonged, coinciding with the contraction of the ventricles, and a *second,* short and distinct, coinciding with their dilatation.

1733. The degree of sound is inversely as the impulse, and directly as the diffusion, of the beats of the heart: it is, consequently, dull in *Hypertrophy,* loud in *Dilatation.*

1734. Of all the theories of the sounds of the heart, that of M. Rouanet appears to me the most probable. According to this author—

1735. The *first* sound of the heart is owing to the sudden closure of the auriculo-ventricular valves on the contraction of the ventricles;

1736. The *second* to the sudden closure of the sigmoid valves of the aorta and pulmonary artery.

1737. With this view pathology strictly accords: whilst the valves are free from disease, the two sounds are distinct and clear; but as these become diseased, the sounds are obscured and replaced by others, as the bellows-, the saw-, the rasp-sound, &c.

1738. The following is the healthy *rhythm* of the heart:—the first sound is synchronous with the impulse and the beat of the pulse; the second speedily succeeds; and, after a rather longer interval, the first is repeated.

1739. In *Hypertrophy* the first sound is still more obscure and prolonged; in *Dilatation* the first sound is louder, more like the second.

1740. The next subject to be noticed is that of *unnatural sounds* of the heart. These are two: *the bellows' sound* and the *cat's purr*.

1741. These sounds vary exceedingly, as do also the morbid conditions in which they exist. These are, contraction of the valves; hysteric and nervous affections; the state of inaction from loss of blood; &c.

1742. These diseases may be thus presented in a tabular form:—

I. DISEASE OF THE HEART IN GENERAL.

II. HYPERTROPHY.
  1. *Of the Left Ventricle.*
  2. *Of the Right Ventricle.*

III. DILATATION.
  1. *Of the Left Ventricle.*
  2. *Of the Right Ventricle.*

IV. HYPERTROPHY WITH DILATATION.
  1. *Of the Ventricles.*
  2. *Hypertrophy of One Ventricle and Dilatation of the Other.*
  3. *Of the Auricles.*

V. CARDITIS; PERICARDITIS; ENDOCARDITIS.

VI. DISEASE OF THE VALVES.
  1. *Of the Aortic Valves.*
  2. *Of the Mitral Valve.*

VII. ANEURYSM OF THE AORTA.

VIII. THE SYMPTOMATIC AFFECTIONS.

1. *Deficient Action of the Heart.*
2. *Palpitation. Bruit de Soufflet.*
3. *Angina Pectoris.*
4. *Pulsation in the Epigastrium.*

I. DISEASE OF THE HEART IN GENERAL.

1743. I. *The History*. The most frequent *cause* of disease of the heart, is some antecedent disease, attended by dyspnœa, and consequently most frequently of the lungs. The principal of these are—

1. *Dry Bronchitis.*
2. *Emphysema.*
3. *Phthisis.*
4. *Chronic Pneumonia.*
5. *Empyema.*

1744. To these causes are to be added muscular efforts, mental emotions, and nervous diseases. And to these, it is said, the congenital disproportion between the size of the heart and the calibre of the aorta, and the congenital unusual thickness or thinness of the ventricles.

1745. There is still another addition to be made to the list of causes of disease of the heart, of an important kind: it is that of

The Metastasis of Rheumatism.

The reader may turn to § 792.

1746. II. *The Symptom* of Disease of the Heart, in its early stage, is *dyspnœa*, uniformly induced, or aggravated, by muscular effort or exertion; in its later stages, various effects of derangement of the *capillary circulation* are superadded. See particularly § 81—.

1747. 1. Disease of the Heart, even in its early stages, is highly characterized by the *invariable* aggravation of the dyspnœa, on making the patient walk quickly, or run up stairs: the beat of the heart becomes violent or tumultuous, and there is a sense of great oppression, or of suffocation. The sleep is disturbed by frightful dreams.

1748. In the later stages and more aggravated forms of Disease of the Heart, the dyspnœa and oppression are permanent, perhaps extreme: not only muscular effort, but the horizontal posture, becomes insupportable.

1749. The countenance, at first of a dingy pallor, becomes tumid, and livid, or of a purple hue, especially the lips; the posture is raised by successive additions of pillows, until it becomes perfectly upright, and eventually the patient may require to have the feet placed low, whilst his head and shoulders are raised, and the shoulders or elbows are supported. The dyspnœa and oppression augment; the various *Complications* to be immediately enumerated, with their appropriate symptoms, are gradually superadded.

1750. The symptoms and signs of each particular disease of the heart will be detailed under their respective heads.

1751. III. *The Complications* of Disease of the Heart form, with that disease, and its most frequent causes, a series or chain of organic lesions of the most interesting character. The causes have been already enumerated, § 1743; the *effects* are the following:—

1. *Cerebral Apoplexy.*
2. *Bronchial, and*
3. *Pulmonary Hæmorrhagy.*
4. *Congestion of the Liver; &c.*
5. *Congestion of the Membrane lining the Ventricles and the Aorta.*
6. *Congestion of the*
    1. *Sub-serous,*
    2. *Sub-mucous, and*
    3. *Sub-cutaneous Tissues.*
7. *Effusion into the*
    1. *Ventricles,*
    2. *Pleura,*
    3. *Pericardium,*
    4. *Peritonæum,*
    5. *Cellular Membrane:*
        1. *Of the Lungs; Œdema.*
        2. *Of the Intestines.*
        3. *Of the Integuments; Anasarca.*

1752. IV. *The Effects of Remedies.* There is a great degree of relief from blood-letting, and from digitalis, not observed in nervous affections of the heart.

1753. V. *The Treatment* consists in subduing the action of the heart by small blood-lettings, by digitalis, by extreme quiet of mind and body, by the most rigid abstinence. These remedies carefully, judiciously, and perseveringly administered, have seemed sometimes to subdue the symptoms, even of organic disease of the heart, for a time.

II. HYPERTROPHY.

1. *Hypertrophy of the Left Ventricle.*

1754. I. *The Symptoms of Hypertrophy* of the Left Ventricle of the Heart, in addition to the symptoms of disease of the heart in general, are a florid complexion, forcible pulsation of the heart, a strong, and generally a regular pulse; there are frequent palpitations.

1755. II. But it is to the *Signs* afforded by the stethoscope and percussion, that we must have recourse for the diagnosis of the individual diseases of the heart. The contraction of the ventricle is accompanied by a strong impulse and a feeble sound; it is prolonged in proportion to the hypertrophy, and is felt and heard over a small space, and principally *between the cartilages of the fifth and sixth ribs,* on the left side of the chest. The *second* is brief, and low.

1756. III. *The Complications.* It is in this form of disease of the heart that *Apoplexy* most frequently occurs as a complication.

1757. IV. *The Morbid Anatomy* consists in augmented thickness and firmness of the parietes of the ventricle.

2. *Hypertrophy of the Right Ventricle.*

1758. I. *The Symptoms.* There is, in this case, greater dyspnœa; and there is frequently an obvious pulsation of the *jugular veins.*

1759. II. *The Signs.* The beat of the heart is attended with great impulse; there is rather less dulness of sound than in hypertrophy of the left ventricle; these signs are perceived *under the sternum.*

III. DILATATION.

1. *Dilatation of the Left Ventricle.*

1760. I. *The History.* This form of disease of the heart occurs most frequently in women, who have naturally a heart of thinner parietes than men. Its *causes* are ossification of the valves, congenital tightness of the aorta, diseases of the lungs, laborious occupations, &c.

1761. II. *The Signs.* The only true sign of Dilatation of the Left Ventricle is a clear and loud sound, heard under the ear or stethoscope, chiefly between the cartilages of the fifth and sixth ribs. The extent to which this sound is diffused is the measure of the degree of dilatation.

2. *Dilatation of the Right Ventricle.*

1762. I. *The Symptoms.* According to Laënnec, *habitual swelling*, without perceptible pulsation, of the *jugular veins*, is the most constant, yet still an equivocal, symptom of dilatation of the right ventricle.

1763. II. The only pathognomonic *Sign* is the loud sound of the heart under the lower part of the sternum.

IV. HYPERTROPHY WITH DILATATION[1].

1764. I. *The Symptoms.* This disease is attended by violent palpitations: the head, the limbs, are moved at each contraction; the pulsation of the carotids is visible, and the pulse is full, strong, and vibrating.

1765. II. *The Signs* afforded by the stethoscope, or the application of the ear, are those of hypertrophy and of dilatation, § 1755, 1761, combined: the contraction of the ventricles is attended by *great impulse* and a notable *sound;* the second sound is loud; the ventricular contraction is heard and felt over a great extent. The *situation*, § 1755, 1769, in which the contractions of the ventricles are perceived, determines whether the left or the right ventricle alone, or both, be affected.

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[1] The '*Active Aneurysm*' of Corvisart, a far more common affection than hypertrophy, or even dilatation, singly.

1766. III. It is in dilatation with hypertrophy that the heart acquires the greatest volume, and in which, consequently, the sound, on *percussion* of the region of the heart, is most obscure.

1767. Sometimes there is dilatation of one ventricle and hypertrophy of the other: there is then the corresponding *augmented impulse*, or *sound*, between the cartilages of the fifth and sixth ribs of the left side, or at the lower part of the sternum, respectively.

1768. Dilatation and hypertrophy of the Left Auricle, usually the effect of disease of the mitral valve; or of the Right Auricle, the effect of Hypertrophy of the Right Ventricle; are not to be distinguished from those original diseases: and if they could, the distinction would be more curious than useful.

1769. IV. *The Morbid Anatomy.* The parietes of the ventricles are greatly thickened and their cavities enlarged; the heart, in consequence, occasionally attains an enormous size.

V. CARDITIS.

1770. I. *The Causes* of Carditis are, exposure to atmospheric inclemencies, to cold and damp, &c. Carditis is frequently a complication of *Rheumatism.*

1771. II. Carditis is always complicated with Pericarditis (*περί, around, καρδία, the heart*), Endocarditis (*ἔνδον, within, καρδία, the heart*), or both.

1772. III. *The Morbid Anatomy* consists in—

1. *Softening; diffused Suppuration; Abscess.*
2. *Ulceration; an Aneurysmal Sac; Perforation.*
3. *Induration*[1].

PERICARDITIS.

1773. I. *The History.* The *causes* of Pericarditis are—rheumatism; exposure to cold or damp; and it is said, a blow,

violent exertion, or mental affection. Men are more subject to this disease than females.

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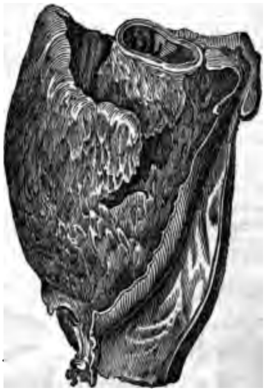
[1] The signs of *induration* of the heart are those of hypertrophy: those of *softening*, are defective impulse and of sound, occurring simultaneously.

1774. II. *The Symptoms* or *Signs* of Pericarditis are sudden pain or anxiety in the region of the heart, palpitation, dyspnœa, irregularity of the pulse, the absence of respiratory murmur under the ear, and of sound on percussion, and external tumor; the contractions of the ventricles frequently become stronger and irregular, and, when the surface of the part is covered with a false membrane, they are attended with the creaking,—to and fro,—sound of new leather.

1775. III. *The Morbid Anatomy* consists of

1. *The effusion of Serum, with or without Lymph, Pus, or Blood.*
2. *The Formation of a False Membrane over the Surface of the Heart or Pericardium.*, as represented in the subjoined wood-cut.



3. *Adhesions; sometimes Ossifications.*

ENDOCARDITIS.

1776. I. *The Causes* of Endocarditis, as of Pericarditis, are rheumatism, exposure to atmospheric inclemencies, cold or damp, &c.

1777. II. *The Signs and Symptoms* are, with those of pericarditis, with which Endocarditis is frequently combined, the 'bruit de soufflet'—the bellows' sound, and those of disease of the heart and of its valves in general.

1778. III. *The Morbid Anatomy consists in—*

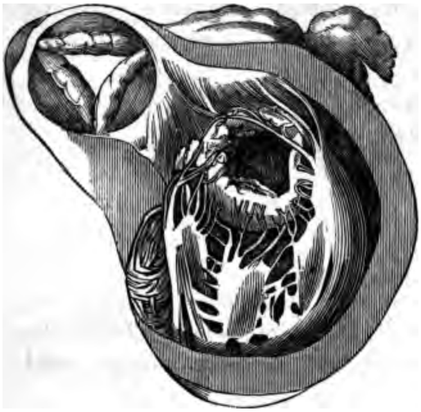
1. *Effusion of Lymph, of Pus, &c.*
2. *Ulceration.*
3. *Induration; Ossification; Growths, &c.*
4. *Contraction, &c. of the Valvular Orifices.*

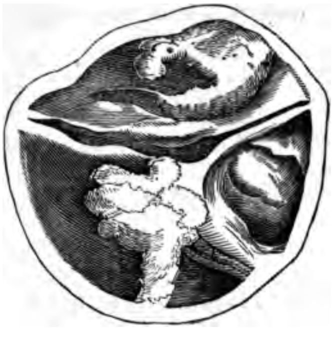
1779. IV. *The Treatment* of Carditis, in all its forms, consists in the application of all our antiphlogistic remedies in the most energetic yet cautious manner: but *blood-letting*, general and local; *mercury* to speedy, complete, and continued salivation; are our principal means of cure.

VI. DISEASE OF THE VALVES.

1780. I. *The Signs* of Disease or Contraction of the Valves consist in the 'bruit de rasp' and the 'frémissement cataire:' the former resembles the sound of a rasp acting upon wood; the latter the purring of the cat felt under the finger[1]. The pulse is irregular. There are many of the general symptoms of disease of the heart.

1781. II. *The Morbid Anatomy.* The mitral valve and the sigmoid valves of the aorta become ossified, or assume a cartilaginous hardness, as is beautifully pourtrayed in these sketches from Meckel:





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[1] The situation and period of the former of these signs might determine, if it were of any moment to do so, the particular valve affected.

violent exertion, or mental affection. Men are more subject to this disease than females.

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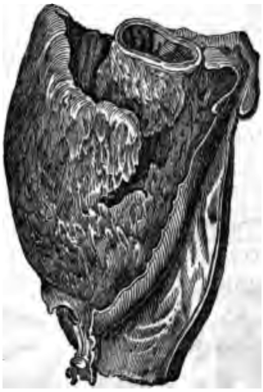
1775. III. *The Morbid Anatomy* consists of

1. *The effusion of Serum, with or without Lymph, Pus, or Blood.*
2. *The Formation of a False Membrane over the Surface of the Heart or Pericardium.*, as represented in the subjoined wood-cut.



3. *Adhesions; sometimes Ossifications.*

ENDOCARDITIS.

1776. I. *The Causes* of Endocarditis, as of Pericarditis, are rheumatism, exposure to atmospheric inclemencies, cold or damp, &c.

1777. II. *The Signs and Symptoms* are, with those of pericarditis, with which Endocarditis is frequently combined, the 'bruit de soufflet'—the bellows' sound, and those of disease of the heart and of its valves in general.

1778. III. *The Morbid Anatomy consists in*—

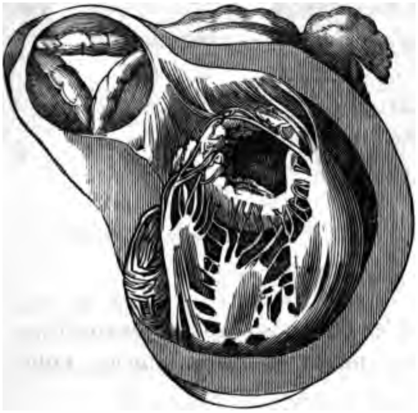
1. *Effusion of Lymph, of Pus, &c.*
2. *Ulceration.*
3. *Induration; Ossification; Growths, &c.*
4. *Contraction, &c. of the Valvular Orifices.*

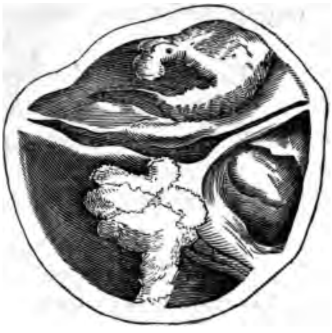
1779. IV. *The Treatment* of Carditis, in all its forms, consists in the application of all our antiphlogistic remedies in the most energetic yet cautious manner: but *blood-letting*, general and local; *mercury* to speedy, complete, and continued salivation; are our principal means of cure.

VI. DISEASE OF THE VALVES.

1780. I. *The Signs* of Disease or Contraction of the Valves consist in the 'bruit de rasp' and the 'frémissement cataire:' the former resembles the sound of a rasp acting upon wood; the latter the purring of the cat felt under the finger[1]. The pulse is irregular. There are many of the general symptoms of disease of the heart.

1781. II. *The Morbid Anatomy.* The mitral valve and the sigmoid valves of the aorta become ossified, or assume a cartilaginous hardness, as is beautifully pourtrayed in these sketches from Meckel:





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[1] The situation and period of the former of these signs might determine, if it were of any moment to do so, the particular valve affected.

violent exertion, or mental affection. Men are more subject to this disease than females.

1774. II. *The Symptoms* or *Signs* of Pericarditis are sudden pain or anxiety in the region of the heart, palpitation, dyspnœa, irregularity of the pulse, the absence of respiratory murmur under the ear, and of sound on percussion, and external tumor; the contractions of the ventricles frequently become stronger and irregular, and, when the surface of the part is covered with a false membrane, they are attended with the creaking,—to and fro,—sound of new leather.

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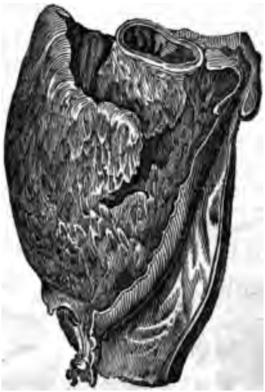

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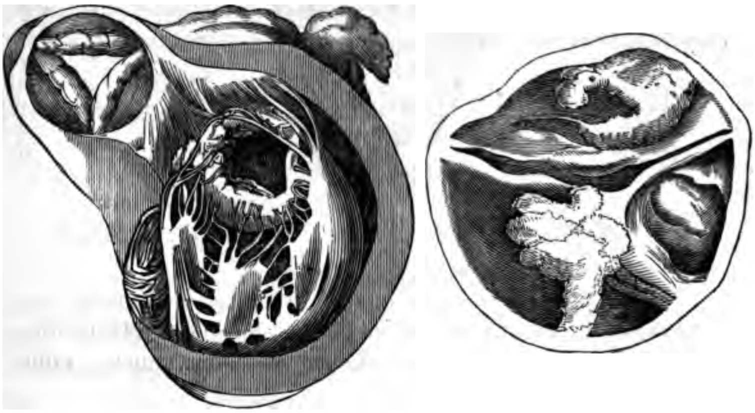

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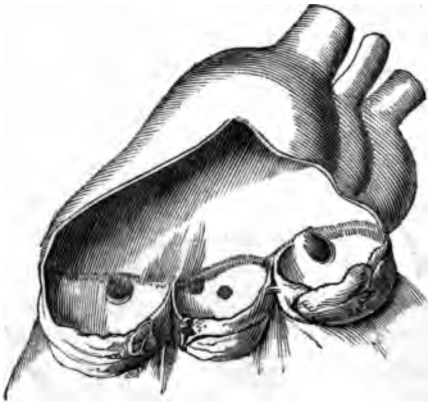
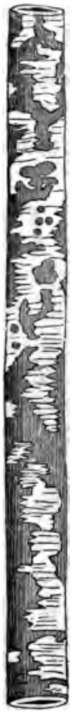
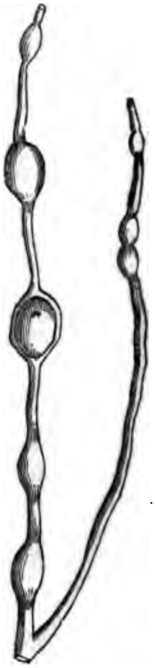
[1] The situation and period of the former of these signs might determine, if it were of any moment to do so, the particular valve affected.

1792. It ought to be repeated that a tumor, as encephalosis, may occasion precisely similar effects. The reader may revert to § 1620, and pass on to §1811.

1793. As subjects of anatomical interest, I may present my reader with the subjoined sketches of ruptured aortic valves, ossification of the artery, and of *phlebolithes* (φλὲψ, *a vein*, λίθος, *a stone*).







1794. Before I leave this subject, I must state that when the circulation is interrupted by disease—inflammation, ossification, &c.—of the *arteries* of a limb, especially of the lower extremity, gangrene is apt to supervene; this constitutes, in aged persons, the disease termed *gangræna senilis:* when, on the contrary, the circulation through a principal *vein* is interrupted, œdema, anasarca, or a dense white tumefaction, is the consequence, as in *phlegmasia dolens*, a similar disease unconnected with the puerperal state, &c.

VIII. THE SYMPTOMATIC AFFECTIONS.

1795. The first of the Symptomatic Affections of the Heart are those in which the action of this organ is too feeble: these are—

1. *The Erethismus Mercurialis.*
2. *The Effects of the Digitalis.*

1796. *The Symptoms* in the former case have been already detailed § 390—.

1797. *The Symptoms* resulting from the Digitalis are nausea and vomiting, debility, faintness, and cold perspirations; the action of the heart and the pulse are feeble and intermitting.

1798. The second symptomatic affection is the

Angina Pectoris.

1799. I. *The History.* This affection consists in attacks which recur at various intervals, generally from the influence of muscular effort or exertion, as in walking quick, up an ascent, or meeting the wind; or from mental emotions, especially anger. This affection occurs principally in men past fifty.

1800. II. *The Symptoms* are a sense of pain, pressure, or constriction in the region of the heart, across the breast, especially on the left side, and of pains or numbness down the arms, especially the left. In females, the mamma is sometimes extremely sensitive to the touch. In extreme cases, there are palpitation, or syncope, and suffocating dyspnœa, and the apparent danger of dissolution. It is sometimes suddenly fatal.

1801. At first, the intervals are long and free from indisposition; afterwards, they become shorter, and the Angina is far more readily excited, if not in some degree constantly present.

1802. III. *The Morbid Anatomy.* Heberden observes—"Inciso cadavere hominis, qui hoc morbo subito perierat, expertissimus anatomicus nullum vitium deprehendere potuit in corde, aut valvulis, aut in arteriis, venisve, vicinis, præter exigua rudimenta ossea in aorta." Laënnec is of opinion that the Angina Pectoris, although it may be accidentally associated with diseases of the heart, does not, as Parry supposed, necessarily depend upon it.

1803. IV. *The Treatment* is that for Disease of the Heart in general, § 1753, and that for Dyspnœa, § 888, or other primary morbid affection.

1804. The third class of symptomatic affections of the heart consists of—

1. *Palpitation and the*
2. *Bruit de Scie.*
3. *Frémissement cataire.*

1805. These symptoms are apt to occur in—

1. *Intestinal Irritation.*
2. *Reaction from Loss of Blood.*
3. *Hysteria.*
4. *Chlorosis.*
5. *Dyspepsia.*

1806. It is only necessary for me to refer to the descriptions of these affections, the diagnosis flowing from the general symptoms.

1807. Palpitation is more felt by the patient, than the beating of the heart in hypertrophy; and it is, in fact, attended by little real impulse: scarcely raising the ear or the stethoscope.

1808. The 'bruit de scie' is, like palpitation, a frequent symptom in some nervous affections. It attends the reaction from loss of blood, and may be produced in a dog very readily, as I have shewn in a recent Essay[1]. I have also observed it most distinctly in Chlorosis. It has been more recently particularly noticed by M. Bouillaud, who has compared it to the noise made by a toy, and has denominated it '*bruit de diable.*'

1809. The last symptomatic affection which I shall notice in this place is

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[1] See the Med. Chir. Trans. vol. xvi.

Pulsation in the Epigastrium, &c.

1810. This affection, seems, like palpitation, to be dependent on nervous causes, and is distinguished, like that symptom, by occurring in paroxysms, in dyspeptic persons, from mental emotion, &c[1]. Sometimes aneurysm is imitated still more accurately by the pulsation being communicated to an apparent tumor, formed by gas pent up, or fæculent matter detained, in folds of the colon[2].

1811. Pulsation, the sense of purring, the 'bruit de soufflet,' the 'bruit de scie,' occur along the abdominal aorta, in the carotid, and even in the radial artery, from similar nervous causes.

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[1] See an interesting account of this malady by Dr. Baillie, in the Trans. of the Col. of Phys. of Lond. vol. iv, p. 271.

[2] An interesting case of this kind, in which both Bayle and Laënnec were deceived, is detailed by the latter able writer, in his Treatise de l'Auscultation, ed. 2, t. ii, p. 659.

CHAPTER IV.

OF THE DISEASES OF THE ALIMENTARY CANAL.

1813. THE Alimentary Canal comprises the stomach, the duodenum, the jejunum, the ileum, the colon, and the rectum. Each of these portions is liable to its peculiar diseases, and is, therefore, of great interest in a medical point of view.

1814. Each division of the Alimentary Canal may be viewed as consisting of a serous and of a mucous membrane, of a muscular coat, and of a cellular tissue. Each of these textures is subject to its peculiar morbid actions and lesions.

1815. It may be observed, in general, that inflammatory affections of the peritonæum do not necessarily disturb the functions of the stomach and intestines; those of the muscular coat, on the contrary, as enteritis, are apt to be attended by sickness, severe pain, and obstruction; whilst those of the mucous membrane are usually associated with pain of a less severe kind, and diarrhœa. We may readily judge of the character of the first by what we witness in the familiar example of Peritonitis, of that of the second by what occurs in Hernia, and of that of the third by the symptoms observed in Dysenteria. I would propose to characterize the inflammatory affections of the mucous membrane by prefixing the Greek preposition εσω to our present terms: eso-gastritis and eso-enteritis would, in a very simple manner, express inflammation of the mucous membrane of the stomach and of the intestines; and the further epithets of membranous and follicular would distinguish the inflammation of the mere membrane or of the follicles. The prefix, περι, would express the inflammation of the involving serous membrane. Since I offered this suggestion, M. Bouillaud has proposed to designate the inflammation of the internal lining of the heart in the same manner; see § 1771.

1816. Of affections of a nature different from inflammation, some are attended with obstruction and distention, whilst, in others, to these symptoms are added an inverted or antiperistaltic action, and vomiting, perhaps of fæculent matters.

1817. The diseases of the Alimentary Canal admit of a practical division, into the Acute, the Chronic, and the Insidious; the last-mentioned term being used to distinguish those diseases which are usually progressively, though slowly, fatal. To this list the symptomatic affections must be subjoined.

1818. It is in these different aspects that the subject is to be viewed in this work, and the disease of the entire Alimentary Canal may be presented in the following tabular form:—

I. THE ACUTE DISEASES.

I. PERITONITIS.
  1. *Diffused.* 2. *Partial.*
II. ENTERITIS.
III. OBSTRUCTIONS OF THE INTESTINES.
  1. *Hernia, External, Internal.*
  2. *Intus-susceptio.*
  3. *Compression ;*
  4. *Internal Obstruction.*
IV. ILEUS; COLIC.
V. COLICA PICTONUM.
VI. IRRITATION.
VII. CHOLERA;
  1. *Europæa.*
  2. *Indica.*
VIII. ESO-GASTRITIS; CORROSIVE POISON.
IX. ESO-ENTERITIS.
  1. *Membranous.*
  2. *Follicular.*

X. DYSENTERIA.

XI. HÆMORRHAGY.

XII. PERFORATION.

  1. *Of the Stomach.*
  2. *Of the Intestine, &c.*

XIII. INFLAMMATION IN THE ILIAC REGION.

  I. *Of the Caput Cæci.*
  II. *Of the Appendix Vermiformis.*
  III. *Of the Appendages of the Uterus.*

II. THE INSIDIOUS AND PROTRACTED DISEASES.

I. PERITONITIS.

II. TUBERCLES.

  1. *Of the Peritonæum.*
  2. *Of the Intestines.*
  3. *Of the Mesenteric Glands.*

III. ESO-GASTRITIS.

IV. ESO-ENTERITIS.

V. SCIRRHUS.

  I. *Of the Stomach;*
    1. *Of the Cardia,*
    2. *Of the Stomach,*
    3. *Of the Pylorus.*
  II. *Of the Intestine;*
    1. *Of the Ileum,*
    2. *Of the Colon,*
    3. *Of the Rectum.*

VI. ENCEPHALOSIS; ETC.

VII. DISEASES OF THE RECTUM.

III. THE CHRONIC AFFECTIONS.

I. DYSPEPSIA.

II. INTESTINORUM TORPOR.

III. VERMES.

I. THE ACUTE DISEASES.

I. PERITONITIS.

1. *Diffused.*

1819. I. *The History.* The attack of acute Peritonitis is generally prompt or sudden, after exposure to wet and cold, and after rigor.

1820. II. *The Symptoms* arise out of acute pain and tenderness in the abdomen: the countenance has a peculiar expression; the upper lip is drawn upwards and bound tightly over the teeth; the posture of the patient is not less peculiar; he generally lies still, upon the back, every motion being attended by augmented pain; the head cannot be raised from the pillow, nor the trunk moved, without exciting pain and its expression in the countenance and manner; the respiration is thoracic, the diaphragm being kept unmoved; the knees are frequently raised so as to remove the pressure of the bed-clothes.

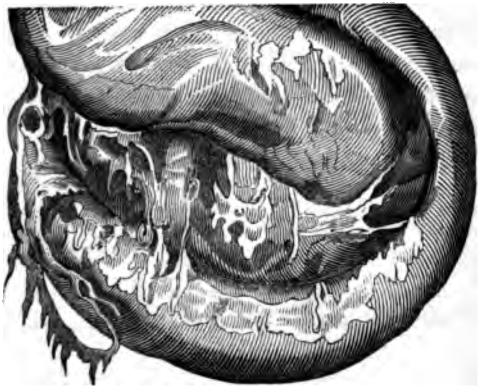
1821. A careful examination of the abdomen should be made, daily: in this manner we detect the part which is the principal seat of inflammation, and even some part of the morbid changes, as the effusion of serum, and perhaps of lymph, by the pain and tenderness experienced, and the tension and doughy state observed on pressure.

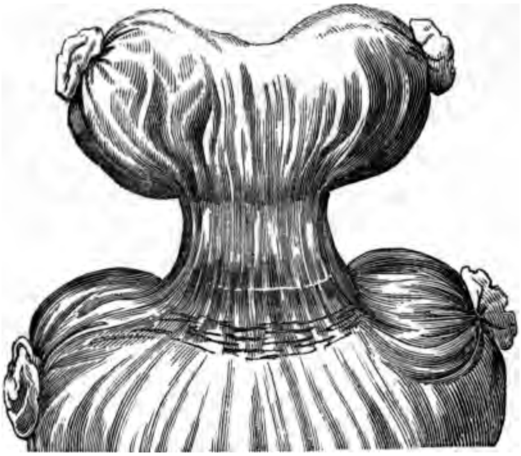
1822. The functions of the stomach and bowels are not always materially affected; there may be no vomiting, nor constipation.

1823. The skin is usually of very moderate heat; the pulse very moderately quick.

1824. III. *The Effects of Remedies.* There is, in this, as in all cases of inflammation of the serous membranes, great tolerance of loss of blood; and this fact becomes a most important diagnostic and guide in the treatment of the disease.

1825. IV. *The Pathology.* The morbid changes consist principally of the effusion of serum, mingled or not, with flakes of lymph, puriform, or sanguineous; or of lymph, by means of which adhesions are contracted between the peritoneal surfaces, or the folds of the intestine, as is represented in these sketches:—





1826. V. *The Treatment* is nearly similar to that of Pleuritis, § 1597. Blood-letting, instituted on the plan explained § 353, and repeated according to its effect upon the disease and the general system; mercury administered, especially by friction, so as promptly and effectually to induce ptyalism; leeches; antimonial powder; enemata of warm-water;—such are the principal remedies in this terrible disease, in which, as in all inflammatory affections, we should be continually revolving in our minds, what may, at the moment, be the probable condition of the extensive membrane, the extensive cavity, involved.

1827. The longer the case has continued, the more persevering must be our treatment, in order that it may be effectually subdued,—and especially our use of mercury and local measures.

II. *Partial Peritonitis.*

1828. Peritonitis may be partial. It *may be* confined, indeed, to *any* part of the peritonæum, as that which covers *the stomach*, *the intestines*, or any portion of the latter; to *the epiploon*, to *the mesentery;* to *the hypochondrium;* to *the iliac region;* to *the pelvis*, &c.

1829. In many of these cases, the *Symptoms* are pain, tenderness, and perhaps hardness and tumidity, of the part affected, together with some degree of interruption of the function of the adjacent organs.

1830. There may be effusion of serum, lymph, or puriform fluid; and there may be—

1. *Resolution;* or
2. *Suppuration, and the Abscess may open*
    1. *Externally*
    2. *Into the Intestine;*
    3. *Into the Abdomen.*

1831. VI. *The Treatment* is that of topical inflammation, and especially, after a time, the introduction of setons. See further, § 1901; 1906.

II. ENTERITIS.

1832. I. *The History.* The attack of Enteritis is usually rather sudden, and frequently occasioned by exposure to wet and cold.

1833. II. *The Symptoms* are those of peritonitis, § 1820, with the addition of sickness and vomiting, and obstruction or extreme difficulty of moving the bowels. The extremities are frequently cold and livid, and the pulse small; the countenance expressive of great pain, the upper lip being raised and bound over the teeth; the movements extremely cautious; the respiration thoracic; the abdomen extremely tender.

1834. Early *sinking* is apt to take place, without gangrene: the countenance is cold, livid, and collapsed; the extremitities livid, cold, and clammy; the pulse thread-like or quite imperceptible; the pains perhaps entirely gone. The patient and bystanders frequently imagine that the disease is subdued, when it is, in fact, only yielding to dissolution! This is particularly the case in a renewed attack of Enteritis. I would draw the attention of the yonng student to this fact in the most earnest manner.

1835. III. *The Morbid Anatomy* in Enteritis consists chiefly in the deposit of layers of lymph upon the intestine, leading to adhesions.

1836. IV. *The Treatment* consists in prompt and energetic blood-letting, as in peritonitis, § 1826; full opiates for pain; enemata of warm-water.

III. OBSTRUCTION OF THE INTESTINES.

1837. In every case of Enteritis, or of disease *similar* to Enteritis, the physician should search diligently for some cause of Obstruction; for the symptoms of the two affections are almost identical.

1838. The different forms of Obstruction are—

1. *External Hernia.*
2. *Internal Hernia.*
3. *Intus-susceptio.*
4. *Compression.*
5. *Internal Obstruction.*

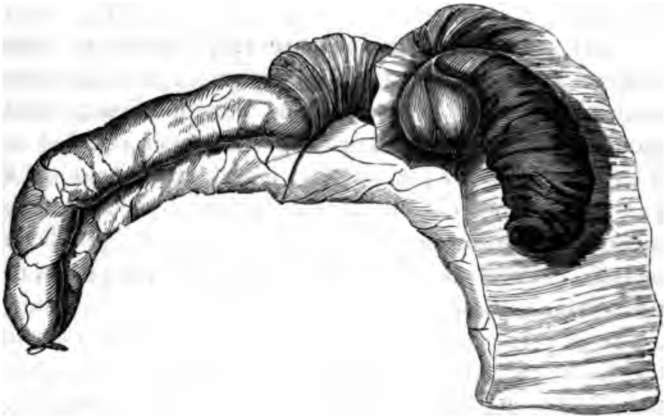
1839. The first of these is principally

1. *Inguinal.* 2. *Femoral.* 3. *Umbilical; &c.*

1840. The second is hidden, being

1. *Diaphragmatic;*
2. *Mesenteric;*
3. *Epiplootic, &c. or*
4. *Formed by the Passage of a fold of Intestine between a Loop of Intestine adherent after Inflammation.*
5. *Vaginal; &c.*

1841. *Intus-susceptio* generally consists of the descent of a higher portion of intestine into a lower one,—of the ileum into the colon. In this case there is sometimes, with the usual symptoms of Obstruction, a tumor of an extended form along the part affected. Intus-susceptio is beautifully given in this sketch from Dr. Carswell:—



1842. *Compression* is the consequence of a tumor external to the intestines; *internal Obstruction* is the effect of calculus, or perhaps of impacted fæces. In all these cases a tumor will be discovered on examination.

1843. I. *The Symptoms.* There is less tenderness, at first, but more sickness and vomiting, than in enteritis, and the obstruction of the bowels, under the influence of purgatives and enemata, is complete. *Such symptoms should always lead to the most attentive search for the source of Obstruction.*

1844. There is great anxiety. The sickness and vomiting increase; the abdomen becomes tender and tumid; the Obstruction is obstinate, the action of the bowels perhaps antiperistaltic, so as to lead to stercoraceous vomiting.

1845. II. *The Morbid Anatomy.* Besides the effect of strangulation upon the part more immediately involved in it, as inflammation, gangrene, &c., the intestine above this part is apt to be distended, to a greater or less extent, in the whole, or in parts, of its extent, according to the acute or more chronic character of the disease.

IV. ILEUS OR COLIC.

1846. This disease is very obscure. It frequently proves fatal without leaving any traces of inflammation; and I confine the terms to cases unattended, uncomplicated by other diseases.

1847. I. *The Symptoms* are very similar to those of enteritis and obstruction: there are pains, generally twisting pains of the bowels, chiefly round the umbilicus; vomiting, obstinate constipation; the pain is sometimes relieved rather than augmented by pressure; at length tenderness and tympanitis are superadded to the tormina, perhaps with the inverted action of the intestines and the vomiting of fæculent matters. There are great anxiety, little febrile action, sometimes speedy sinking.

1848. II. *The Pathology.* In some cases a portion of the intestine is found much distended; in others there is the effusion of lymph; and in others a state of gangrene.

1849. But, in fact, the causes and the pathology of Ileus or Colic, properly distinguished from all other diseases, are extremely obscure, and highly deserving of fresh investigation.

1850. III. *The Treatment* is the same as that of enteritis, §1836, with the addition of cathartics (?).

V. COLICA PICTONUM.

1851. I. *The History.* This affection arises from exposure to the influence of lead. It is sometimes a very acute, at others a more chronic, disease.

1852. II. *The Symptoms* are extreme pain of the abdomen, unaugmented, perhaps relieved, by pressure; vomitings, obstinate constipation, retraction of the abdomen towards the spine; generally *without* fever,—chills, heat, or perspiration—with quickness of pulse, whiteness of the tongue, &c.; symptoms which are frequently promptly relieved by large doses of emetics and purgatives[1]. There are frequently pain of the limbs, especially of the arms, great distress, sleeplessness, and restlessness.

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[1] These constitute the 'traitement de la Charité.'

1853. Sometimes the disease is *less acute*, and the pains are at one period dull, at another extreme. The attacks may continue several days, or even a month, pass off, and return after various intervals.

1854. After a varied duration of this disease, there is usually the accession of *pain* and of a *peculiar paralysis of the muscles of the hands*, but also of the arms and sometimes of the legs; the thumb and fingers are frequently forcibly flexed or distorted. The character of this disease, whether in the abdomen or in the limbs, seems to be that of paralysis united with pain.

1855. III. *The Varieties and Complications* of the Colica Pictonum deserve to be distinctly enumerated. Heberden[1], M. Louis[2], and M. Andral[3], mention

Sudden Death

as an event in this disease. The former speaks of lead as 'nervis inimicissima.' The other events or complications of the Colica Pictonum are—

1. *Coma; Delirium.*
2. *Pain and Paralysis, of the Legs as well as the Arms.*
3. *Convulsions.*

1856. The adductor pollicis shrinks, and sometimes a tumor of the size of a nut is seen occupying the beginning of the meta-carpal bone of the middle finger.

1857. IV. *The Morbid Anatomy.* The most recent researches of M. Andral, M. Louis, and others, confirm the opinion of Heberden, that there is no morbid appearance peculiar to this disease[4].

1858. The seat of the disease is probably the spinal marrow. In this organ we must, therefore, look for its morbid appearances, which have hitherto escaped detection.

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[1] Commentarii, ed. 1807, p. 330.

[2] Recherches Anatomico-Pathologiques, pp. 483—491.

[3] Médecine Clinique, ed. 2, t. iv, p. 153.

[4] "Inciso cadavere hominis hac colica perempti, nullum vitium intus in corpore deprehensum est, quod ad hunc morbum pertinere, mortemque inferre potuisset." Heberden, p. 330.

1859. V. *The Treatment*, which is, according to M. Louis[1] and M. Andral[2], almost invariably successful, consists in active emetics and drastic cathartics. The oleum ricini, the oleum crotonis tiglii, are valuable remedies in this disease.

1860. The strychnine has been employed for the paralysis of Colica Pictonum with doubtful success.

VI. STOMACHAL AND INTESTINAL IRRITATION.

1861. It is only necessary to refer, in this place, to § 298—, and to request the reader's attention to the importance of the distinction between these diseases, and especially to the diagnosis afforded by the effects of the loss of blood.

VII. CHOLERA.

1. *Cholera Europæa.*

1862. I. *The History*. This disease usually arises rather suddenly from the influence of heat, in the autumnal season.

1863. II. *The Symptoms* are violent abdominal pains, with bilious vomiting and purging. The face and surface are often cool, the extremities cold, and perhaps clammy and livid, and the pulse small. To these symptoms are frequently added severe cramps, and sometimes even convulsions.

1864. III. *The Pathology*. There is frequently not the slightest trace of morbid change of structure on examination after death. In protracted cases, red, brown, or black patches, and even gangrenous points, have been found in some parts of the intestines, and the liver has been much congested[3].

1865. IV. *The Treatment* consists principally in opiates for pain, and stimulants if there should be extreme debility.

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[1] Mémoires, p. 489.
[2] Clinique, t. iv, p. 156.

[3] Rostan, Cours de Médecine Clinique, ed. 2, t. ii, p. 506.

1866. Ipecacuanha, as an emetic, has appeared to mitigate the violence of the disease. Mild saline aperients have also appeared to do good, administered before the commencement of the opiates. Soda-water; fomentations to the epigastrium, and to the legs and feet; mitigate the sickness and cramps.

2. *Cholera Indica.*

1867. I. *The History.* This terrible disease is epidemic or sporadic. In the former case it is of dreadful fatality. When sporadic, it is less so. Its causes are very obscure.

II. *The Symptoms.*

1868. The *early* symptoms are mere diarrhœa, perhaps unattended by pain or spasm; the evacuations are copious, liquid, almost inodorous, and usually compared, in appearance, to rice-water.

1869. *Afterwards*, the same sort of fluid is rejected by vomiting and passed by stool, in amazing quantities, variously attended by pain, anxiety, and cramps, but speedily followed by collapse and sinking, the countenance being livid, cold, and clammy, the arms livid, cold, clammy, and pulseless, the voice husky; there is complete suppression of urine.

1870. In the worst cases, there are early blueness, pallor, and collapse of the countenance; loss of voice, loss of pulse; a cold, clammy, and livid state of the extremities; speedy sinking, or asphyxia.

1871. III. *The Morbid Anatomy* consists in intestines replete with fluid like rice-water, in a gall-bladder replete with bile; and in a urinary bladder empty and collapsed. The mucous membrane of the intestines is apt to be injected, and even gangrened, and the clustered and isolated glands are frequently enlarged: but none of these appearances are constant.

1872. IV. *The Treatment.* I do not venture to give an opinion upon the treatment of the Indian Cholera; but I incline to recommend doses of a grain of the hydrargyri submurias every half hour. M. Louis gave opiate enemata apparently with good effect.

VIII. GASTRITIS.

1873. Gastritis, or rather Eso-gastritis, § 1815, as an acute disease, is extremely rare; yet, I believe I have witnessed several instances of such an affection.

1874. I. *The Symptoms* consist in pain, or weight, or dragging, in the region of the stomach, very shortly after eating, and after taking the mildest medicines, sometimes amounting to a paroxysm of suffering, and only terminated by vomiting, and recurring after each repetition of the cause. With these symptoms there are debility and emaciation.

1875. Similar symptoms have appeared to me to arise in *inflammation of the duodenum*, with the addition of icterus, and a tender and somewhat enlarged condition of the liver.

1876. II. *The Morbid Anatomy* of this affection is unknown, but it probably consists in injection or softening of the mucous membrane.

1877. Acute Gastritis occurs in one very unequivocal case, that of the administration of

CORROSIVE POISON.

1878. I. *The History.* As concealment is frequently attempted in this case, it is very important to be aware of every possible means of discovering the fact of poison administered.

1879. II. *The Symptoms* which should excite suspicion are, a *sudden* attack of pain, of vomiting, and, perhaps, of diarrhœa. The matters rejected, and passed, should of course be carefully examined. The history and acts of the patient, of the persons near or present; the articles in the room, &c. are so many sources of diagnosis.

IX. ESO-ENTERITIS.

1. *Membranous.*

1880. A state of inflammation of the mucous membrane of the intestine seems to be the cause of many forms of *Diarrhœa*, especially those attended by *mucous* discharges.

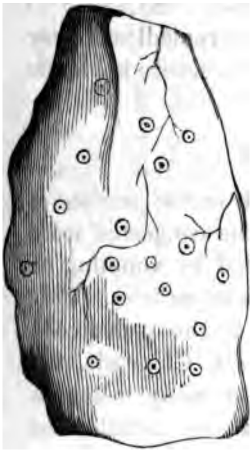
1881. I. *The Symptoms.* There are slight pains or griping, tenderness on pressure, and sometimes, but not always, frequent evacuations. The countenance is pale, perhaps icterode; there are emaciation, and considerable debility. The affection is extremely apt to pass into the chronic form.

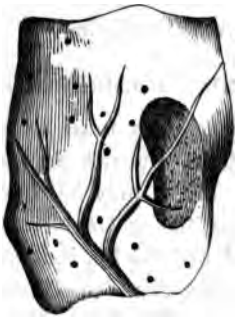
1882. II. *The Morbid Anatomy* consists in injection, softening, and ulceration of the mucous membrane. The last effect is represented in the sketches given p. 28.

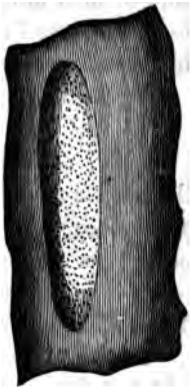
1883. III. *The Treatment* consists in leeches applied to the epigastrium and umbilicus, mild opiates, or opiate enemata, abstinence from food, fomentations of the abdomen and feet; warmth. The patient should remain in bed, in perfect quiet, and free from every kind of exposure.

2. *Glandular.*

1884. This term expresses the tumidity and ulceration of Peyer's and Brunner's glands, already mentioned as occurring, in the *acute* form, in Typhus, § 508—, and in the *chronic* form in Phthisis, § 1696; 2. To the sketches given p. 119, I beg here to add several from M. Andral:—







XI. DYSENTERIA.

1885. I. *The History.* I have witnessed this disease, in its *epidemic* form, in the summer and autumn of three successive years. It also occasionally occurs sporadically. Is it ever contagious?

1886. II. *The Symptoms* are griping, with frequent mucous, sanguineous stools, and constant tenesmus.

1887. There is frequently sickness, and pain and tenderness of the epigastrium, and over the course of the colon, especially in the left ilium. The 'desidendi cupiditas' and the tenesmus are quite terrible. The pain, anxiety, and distress are frequently extreme.

1888. This affection may pass suddenly into the sinking, or slowly into the chronic, state.

1889. III. *The Morbid Anatomy* consists of injection, thickening, and ulcerations of the mucous membrane of the colon and rectum. In severe cases, the morbid changes are still more deeply seated, and the tumefaction is such as to thicken the textures of the intestine, whilst it contracts its calibre; the ulcerations are of irregular forms, but, generally, I think, transverse, and they are often frightfully deep.

1890. IV. *The Treatment* is that which I have described for eso-gastritis and eso-enteritis, §1883: the leeches must be applied in the iliac region and over the colon; mild opiates; arrow-root in water, for the sole diet; fomentations; warmth, and repose, are the chief remedies. Exposure to cold or heat must be avoided. All violent remedies appear to me (and, as I have stated, I have watched a severe epidemic in three successive years) to do harm.

XII. HÆMORRHAGY.

1891. Hæmorrhagy may take place from the surface of the gastric and intestinal mucous membrane congested from any cause, and the blood may be rejected by vomiting or passed per anum, constituting *hæmatemesis* or *melæna*. This event is frequently, if not chiefly, induced by the loaded condition of the bowels observed in Dyspepsia, Chlorosis, &c.

1892. This affection has been cured in many instances which I have witnessed: but I suppose it may be attended by that state of the intestine which has been designated and depicted as the hæmorrhagic, and then prove less remediable. It is well known that hæmorrhagy from the stomach and bowels is a consequence in many diseases, as fever, purpura, ulcers, cancer, &c. and of obstruction of the vena portæ, occasioned by the pressure of an external tumor, or by the obstruction of internal concretions of lymph,—and is then serious in the degree in which the original malady is so.

1893. *The Treatment.* I have seen so many cases of dyspeptic hæmatemesis and melæna cease on giving frequent mild doses of the pilula, and sub-murias, hydrargyri, and ample injections of warm-water, daily, or twice a day, that I beg to recommend this mode of treatment in the strongest terms.

1894. The warm-water injection, to be effectual, should amount to *three pints* on an average; it should be injected as slowly as possible, the object being first effectually to *fill*, and then gently to *distend* the large intestine. It returns freely and immediately upon this stimulus of distension, proving literally a *lavement* or washer of the intestine.

XIII. PERFORATION.

1895. I have already had occasion to allude to *four* cases of Perforation in this work:—§§ 1689; 1772; 1791; 1830. I shall now observe that perforation may take place wherever *abscess*, and especially *tuberculous* abscess, forms, or scirrhus spreads its ravages; it is ultimately the effect of *ulceration* or *laceration;* it is frequently prevented by the formation of *adhesions* between contiguous surfaces, or the deposit of *firm lymph* upon a single surface; it may take place from *any organ*, and penetrate into,

1. *An adjacent Cavity.*
2. *An adjacent Canal.*
3. *Externally.*

1896. The principal situations in which Perforation has occurred from *ulceration* are—

1. *The Lungs;* § 1689.
2. *The Stomach.*
3. *The Ileum.*
4. *The Uterus and Ovarium.*

The case of Perforation from *abscess* occurs in that of the *Liver* principally; that from *Laceration* has taken place in the *Gall-bladder*. It is almost unnecessary to add, that any hollow viscus, or an encysted tumor, wherever it may be situated, may also be perforated by over-distension, by a blow, a fall, &c. See § 1968, 1969; 1986; 1996; &c.

1897. Perforation of the Intestine has occurred principally under the following circumstances:—

1. *Softening of the Mucous Membrane.*
2. *Ulceration of Peyer's or Brunner's Glands, in*
    1. *Typhus;*
    2. *Phthisis?*
3. *The Separation of an Eschar, the effect of poisoning by Sulphuric Acid.*
4. *Gangrene induced by Strangulation.*
5. *Ulceration in Dysentery.*
6. *Rupture in Cancer and other Diseases.*

1898. II. *The Symptoms* are those of the most sudden peritonitis or enteritis: violent pains of the abdomen, exceedingly augmented by pressure; nausea and vomiting; a dreadful change in the countenance, in the powers, and in all the vital functions; a rapidly sinking pulse; a cold, clammy state of the face and of the extremities.

INFLAMMATION IN THE ILIAC REGION.

1899. I have already adverted to the interesting fact of *Partial Peritonitis;* § 1828. I must now draw my reader's attention to some other cases of Topical Inflammation within the Abdomen. They are principally—

I. *Of the Caput Cæci.*
II. *Of the Appendix Vermiformis.*
III. *Of the Appendages of the Uterus.*

To which may be added, in a diagnostic point of view, the occasional tumor in the *iliac region* from—

Psoas, or Lumbar, Abscess.

1900. I. The *first* of these cases is well described by Dupuytren[1]: pain, tenderness, and tumor, in the right iliac fossa; symptoms of obstructed intestine,—vomiting, colic, constipation, &c.; issuing either in *resolution*, or *inflammation* extending to the peritonæum, or *abscess* opening—1. into its cavity, or 2. into the intestine, or 3. pursuing its course variously along the cellular membrane into the *groin*, the *perinæum*, &c.

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[1] Leçons Orales, t. iii, p. 330.

1901. The remedies are those for local inflammation, combined with the lavement and other effectual means of relieving the bowels.

1902. II. The *second* of these affections arises from some substance impacted in the appendix vermiformis: in one case it was a pin encrusted with a calculous deposit; in a second it was a cherry-stone; in a third it was a tooth which had, doubtless, been swallowed.

1903. *The Symptoms* are those of *local inflammation* and, perhaps, of intestinal affection. The *Treatment* is that proper for inflammation; but the patient has appeared to me to bear depletion ill, and speedily sinks under the influence of this generally irremediable disease.

1904. III. The *third* case is one of extreme interest. It usually succeeds to parturition or abortion. It consists of inflammation of the ovarium, or adjacent ligaments, or peritonæum.

1905. *The Symptoms* are local tenderness and tumor, and perhaps fluctuation; sometimes the bladder or its cervix, or the rectum, is compressed, and the tumor is felt on an examination per vaginam. The case sometimes terminates by resolution, sometimes by suppuration, the pus having its issue in the iliac region, into the intestine, in the perinæum, &c.

1906. The *remedies* are those proper for *local inflammation:* leeches or cupping; a *seton;* mercurial inunctions; warm water enemata; &c.

II. THE INSIDIOUS DISEASES.

I. PERITONITIS.

1907. I. *The History.* Chronic Peritonitis may originate in the acute form, or be chronic from its commencement. It may require great attention for its detection.

1908. II. *The Symptoms.* There is sometimes little or no pain, tenderness, or tumor of the abdomen, although a careful examination generally detects some degree of one or other of these symptoms. There is frequently also some degree of vomiting and diarrhœa. But the principal symptoms consist of hectic fever and emaciation.

1909. In the course of the affection, various effusions of serum or lymph take place, and the elasticity of the abdomen is diminished, generally or partially, so as to constitute diffused or partial hardness, or tumor, or even suppuration; or a state of ascites is established.

1910. III. *The Varieties and Morbid Anatomy.* This affection, frequently obscure in itself, is rendered still more so by its varied forms and complications: these arise principally from the

1. *Effusion of serum, when it resembles Ascites.*
2. *The Effusion of coagulable Lymph, when it assumes the form of abdominal Tumor or Tumors.*
3. *The Supervention of Inflammation, or Ulceration, of the Mucous Membrane of the Stomach, or Intestines, or the Mucous Glands.*
4. *The Deposit of Tubercles.*

1911. IV. *The Treatment* consists almost entirely in the effectual and persevering use of the unguentum hydrargyri; regulation of the diet, the bowels, the temperature of the patient's room, &c. and applying leeches, cataplasms, and other local remedies, as they may be indicated by the existence of tumor, pains, &c.

II. TUBERCLES.

1912. *The History* and the *general Symptoms* have been already detailed, § 180—. It only remains to trace, in this place, *the local Symptoms* of this disease.

1913. I. *The History.* Compared with chronic peritonitis, Tubercles of the abdomen form a far more insidious disease still; and it rarely, if ever, puts on an acute form at its commencement, in its progress, or at its termination.

1914. II. *The local Symptoms* are, at first, obscure and deep-seated pain in the abdomen and generally in the right iliac region. This pain is sometimes aggravated for a day or two. At a later period, a degree of tension, and finally of tumor, is added to the tenderness. The bowels are uncertain: frequently there are copious, white, alvine evacuations.

1915. III. *The Morbid Anatomy* consists in—

1. *Tubercles and Tuberculous Adhesions diffused over the Peritonæum.*
2. *Masses of Tubercles and Interstices inextricably matted together.*
3. *Ulcerations of Peyer's and Brunner's Glands, and Tuberculous Enlargement of the Mesenteric Glands.*
4. *Various Tuberculous Masses and Cavities, especially in the right Iliac Region, sometimes communicating with the Intestines.*

III. ESO-GASTRITIS.

1916. I. *The History.* Eso-gastritis is far more frequently an insidious and protracted than an acute disease.

1917. II. *The Symptoms* are such as have been detailed § 1873, in a protracted or repeated form: food and medicine, even of the mildest kind, are apt alike to disagree, inducing pain, sickness, vomiting, a sense of weight, or of dragging, &c. The evacuations are frequently pale and without bile. The strength and the flesh fail.

1918. A careful examination of the epigastrium, and a careful observation of the effects of food and of medicines, the recurrent nature of the attacks of pain and suffering, the condition of the bowels, &c. are the chief diagnostics of this disease, which is, I think, little known.

1919. I have already expressed, § 1875, my opinion that icterus is apt to be formed when the duodenum is involved in this disease. I know, however, that M. Rostan[1] is incredulous upon this point. With the icterus, tenderness and enlargement of the liver (from bilious congestion ?) are apt to take place, with a disposition to anasarca.

1920. III. *The Morbid Anatomy* consists in softening, thinness, and perhaps destruction of the mucous membrane of some part or parts of the stomach, or this membrane becomes mammilated.

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[1] Cours de Médecine Clinique, t. ii, p. 447.

IV. ESO-ENTERITIS.

1921. I. *The History.* This disease, like the eso-gastritis, generally occurs in an insidious and protracted form.

1922. II. *The Symptoms* are intestinal pains and tenderness, and generally diarrhœa. The evacuations, carefully inspected, frequently display appearances of mucus, or pus, or even blood. There are slight fever, debility, and wasting of the flesh.

1923. III. *The Morbid Anatomy* consists of injection, discolouration, softening, and perhaps ulceration of the mucous membrane of the intestine, in various parts of its course.

1924. IV. *The Treatment.* Enemata of warm-water afford great relief, and constitute one of our chief resources in this disease. The application of leeches, and a diet confined to arrow-root prepared in water; a regulated temperature, and rest in bed, are the other remedies.

V. SCIRRHUS.

1925. I. *The History.* No disease can be more insidious than Scirrhus of the Stomach, unless it be so situated as to interfere with the ingress, or egress of the food. It usually occurs in the *middle* periods of life, being rarely seen in early youth or extreme age. It can seldom be traced to any particular cause.

1926. II. *The general Symptoms* have been slightly sketched, § 269. They consist in a peculiar pale, sallow, worn countenance, expressive of suffering, usually with a gradual emaciation.

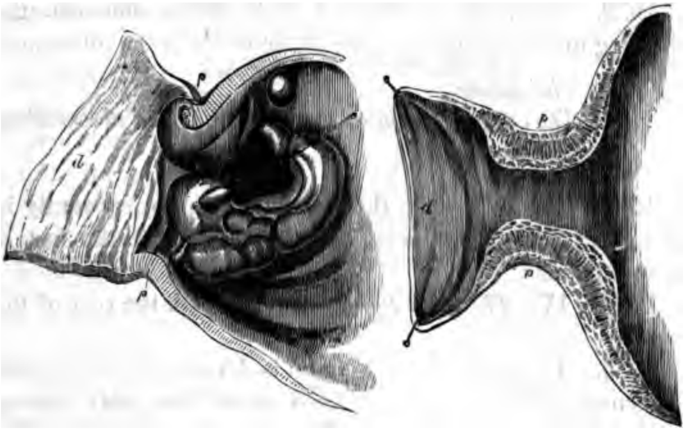
1927. III. *The local Symptoms* depend entirely upon the situation and mechanical effect of the disease. Its principal seats in the stomach are—

1. *The Cardia,*
2. *The Pylorus,*
3. *The Body of the Stomach,*

with impediment to the entrance, or exit, of food, in the two former cases.

1928. 1. Scirrhus of the cardia induces pain and difficulty in swallowing, which slowly but daily increase. The food is apt, late in the disease, to accumulate in the lower part of the œsophagus, and to be rejected, by a peculiar effort, not dissimilar in mechanism to that of vomiting[1], without having ever reached the cavity of the stomach,—together with much mucous or glairy fluid[2].

1929. 2. Scirrhus of the pylorus is represented by the subjoined wood-cuts:—



It is denoted by an accession of pain, oppression, and other inconvenience, some time after eating, which increase gradually until the stomach relieves itself by vomiting. The mornings are comparatively easy, and the evenings full of suffering, from the alternate, comparative empty, or replete, condition of the stomach.

1930. 3. In Scirrhus of the body of the stomach, which is usually seated at the small curvature, there are only the general symptoms of disease and of Scirrhus, with ardor, gastrodynia, uneasiness, &c. at various periods after eating.

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[1] See a Memoir by the Author, in the Journal of the Royal Institution for June, 1828; and the Medical Gazette for 1833.

[2] April 2, 1834. I have this day examined a patient with Dr. Heming, who died of total incapacity of swallowing. Fluids would pass to the cardia, distend the œsophagus, and be rejected by vomiting; the fæces were pale and resembled chyle; a tumor was felt, during life, in the left iliac region. There was *no* disease of the cardia; the caput coli was distended by masses of indurated fæces. The contents of the œsophagus and of the stomach were totally dissimilar, the former being like recent liquid food, the latter a dark olive-green fluid; the gall-bladder was distended with bile. The patient was a female, aged 21.

1931. Besides the symptoms already detailed, it is important to notice the condition of the matters rejected from the œsophagus or stomach: these are mucus, pus, sanies, blood, &c. sometimes of extremely fœtid odour. It is also important to examine carefully and repeatedly for *tumor*.

1932. After these different parts of the stomach, the following are the principal seats of Scirrhus in the intestines:

1. *The Ileum.*
2. *The Colon, especially the ascending and descending.*
3. *The Rectum.*

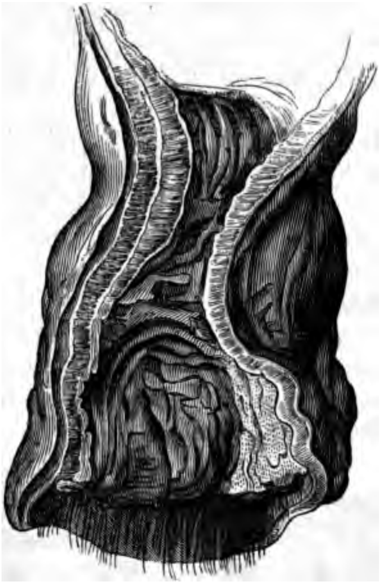
1933. Rarely seen in the first, much more frequently in the second, this disease occurs most frequently in the last of these situations.

1934. IV. *The local Symptoms* vary with the seat of the disease:—

1935. 1. Scirrhus of the ileum is denoted by local pain, tenderness, and tumor, augmented some time after eating, and eventually attended by vomiting, paroxysms of pain, and symptoms of obstruction. The sufferings are usually augmented after eating, or towards evening.

1936. 2. Scirrhus of the colon is attended by similar symptoms and by pains of the kind designated by the term *colic;* whilst the sense and symptoms of obstruction are more distinct, and the evacuations are more marked by mucus, pus, or blood. The bowels become more and more constipated—obstructed. The symptoms are apt to be aggravated in paroxysms of augmented obstruction. The course of the colon, and especially the ascending and descending portion, must be carefully and repeatedly examined for *tumor.*

1937. 3. Scirrhus of the rectum is accompanied by *similar* symptoms, which, even when alone, should lead to an examination *per anum.* There are afterwards local pains, great difficulty in passing the fæces, gradually augmented; discharges, at first of mucus, and afterwards of fœtid sanies, pus, or blood; tumors at the verge of the anus, &c. the



occurrence of any one of which should also lead to an attentive examination.

1938. V. *The Morbid Anatomy* of Scirrhus consists, according to M. Andral, in hypertrophy of the cellular membrane. The part affected is indurated, thick, and traversed by hard, white bands, which separate the muscular fibres. At length the mucous membrane and the peritonæum are involved in a change of structure which was originally confined to the cellular membrane. Eventually, ulceration takes place, and an open cancer is formed, with rugged surfaces, fungous growths, frightful chasms, &c.

1939. VI. *The Treatment* can only be palliative: the bowels must be relieved by the mildest measures, as an enema of barley-water or linseed tea, and the pain and irritation are to be relieved by opiates, either swallowed or administered per rectum.

VI. ENCEPHALOSIS.

1940. I. *The History.* This disease is scarcely attended by any symptoms until it manifests itself by a tumor, perceptible on examination, or by its effect upon adjacent organs. § 269.

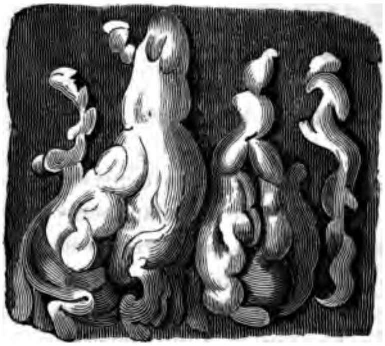
1941. II. *The Symptoms* of Encephalosis of the abdomen are, therefore, a tumor, less sensible on pressure than inflammation, less marked by general symptoms than tubercles.

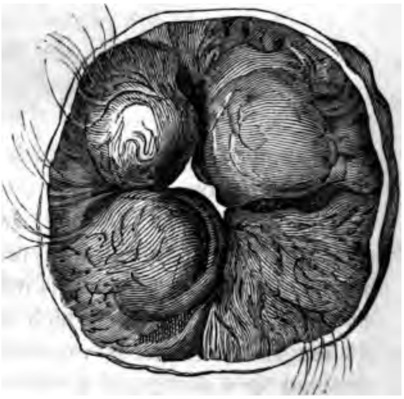
VII. DISEASES OF THE RECTUM.

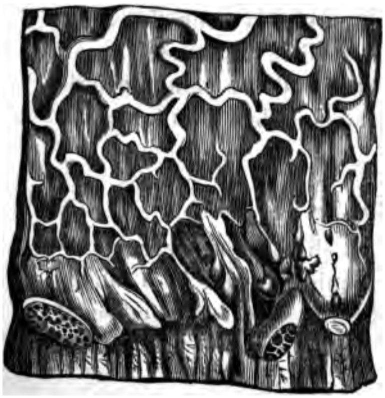
1942. In this place I must draw the attention of my young reader to other cases of *disease of the rectum*, which it will be his office to distinguish from Scirrhus:—

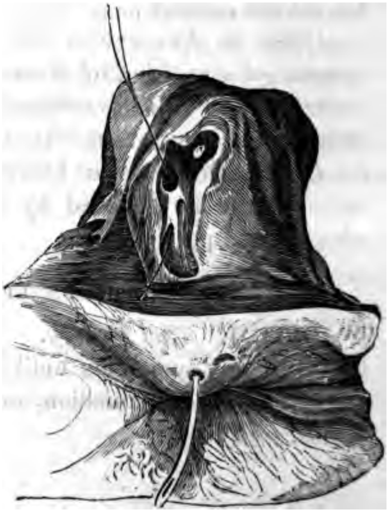
1. *Common Stricture.*
2. *Hæmorrhoids.*
3. *Prolapsus.*
4. *Fistula.*
5. *Impacted Fæces.*
6. *Biliary or Intestinal Calculus, &c.*

1943. The case of Hæmorrhoïds and that of Fistula are represented in the subjoined sketches taken from Baillie and Dr. Carswell—









1944. These diseases are distinguished by a careful *examination*[1].

1945. But I am sorry to say that it has become necessary to distinguish diseases of the rectum from *no disease of the rectum!* A friend of mine—and I have heard of similar events—had a rectum bougie passed daily, whilst at Bath, from suspicion of stricture or other disease of the rectum. I was persuaded that there was *no disease.* I took him to Sir C. M. Clarke, who confirmed my opinion. The bougie was omitted, and all the symptoms vanished, with much of real distress, and much more of groundless and unnecessary apprehension.

III. THE CHRONIC DISEASES.

I. DYSPEPSIA.

1946. I propose, in this place, merely to call the attention of my readers to several prominent forms of dyspepsia. They are principally,

1. *Gastrodynia.*
2. *Pyrosis.*

1947. 1. *Gastrodynia* may occur either with an empty stomach or after eating: in the former case, it is usually conjoined with acidity; in the latter, it follows almost immediately upon taking food. In both cases it is chronic, and distinguished from Eso-gastritis by producing little effect on the general system.

1948. 2. *Pyrosis* consists in the sudden rejection of a quantity of a saltish fluid from the stomach, accompanied by ardor, or acidity. Like gastrodynia, it is chronic, and induces little effect on the system at large.

1949. *The Treatment* consists in regulating the diet, the bowels, the exercises, &c. The white oxide of bismuth, and the hydrocyanic acid, afford relief.

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[1] In one case the *sphincter* ani was so contracted that the finger could scarcely be introduced, or the fæces rejected. On passing the catheter, it was found that a calculus was fixed in the urethra, near the vesicæ. The cervix stricture ceased when this was removed!

There is a singular affection of the rectum which I have not seen described: in the case to which I allude, a severe pain usually awakes the patient out of his first sleep; it ceases on making *forcible* efforts as if to evacuate the rectum, during the space of about five minutes.

II. INTESTINORUM TORPOR.

1950. By this term I wish to designate a strange disposition in the large intestines to form scybala and to retain them in its cavity, whilst there may be constipation, or a daily insufficient evacuation of the bowels. The effect of this disposition in inducing a variety of ailments is very imperfectly understood.

1951. The principal remedy is a daily aloëtic pill, and warm-water enema.

III. VERMES.

1952. There are *three* principal forms of worms in the human alimentary canal:—

1. *The Ascaris, or Thread-worm.*
2. *The Lumbricus,* or that like the common earthworm.
3. *The Tænia, or Tape-worm:*
    1. *The T. lata, or Broad Tape-worm,*
    2, *The T. solium, or Long Tape-worm.*

The *Tricocephalus,* (θρὶξ, τριχὸς, *the hair,* κεφαλὴ, *the head),* or *Trichuris,* (θρὶξ, *hair,* and οὐρὰ, *the tail),* is another form of thread-worm usually found in the cæcum.

1953. The first is principally found infesting the *rectum* in children. The second in the *stomach or intestines.* The third, principally in the *ileum,* in the adult.

1954. The ascaris produces much irritation about the anus. It is removed by an injection of infusion of quassia, or by using the little finger as a scoop. The lumbricus is removed by purgative medicine.

1955. There are no symptoms which positively indicate the presence of tænia. We can only suspect its existence from a sense of gnawing pain in the stomach, give a cathartic, and examine the evacuations. There is a quack remedy termed "*potion de M. Darbon,*" which, according to the accurate examination of M. Louis, is infallible[1]. The spiritus terebinthinæ is a very valuable remedy in this affection.

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[1] See Mémoires, &c. p. 530.

CHAPTER V.

OF THE DISEASES OF THE LIVER, PANCREAS, AND SPLEEN.

1956. FEW diseases require the attention of the physician more than those of the Liver; the diseases of the Spleen, and especially of the Pancreas, are too obscure to possess equal interest.

1957. The Liver is the central organ of so many systems,—the hepatic artery, the vena portæ, the biliary ducts; the hepatic vein;—that its diseases, minutely considered, must be equally various and important. The profession possesses a treatise on this subject, of great value and novelty, by Mr. Kiernan, who has made many interesting discoveries in the minute anatomy and pathology of this organ.

1958. The *Lungs* subsist, as a part of the general circulation, between the right and left sides of the heart; M. Andral has arranged the *Spleen* in a similar manner[1]; the *Liver* certainly deserves such a place much more preeminently: its function seems to be subsidiary to that of the lungs, as a depurator[2] of the blood, and the whole of the blood accumulated in the vena portæ circulates through its substance.

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[1] Précis d'Anat. Path. t. i, p. 416.

[2] The lungs serve to purify the blood with the evolution of heat; the liver performs the same office without that evolution; the difference of combination of these two organs seems to lead to the constitution of the different classes of animals with warm or cold blood, and with low and high irritability.

1959. But it is my object to place before my reader, as usual, a *practical* view of the diagnosis of hepatic diseases. The Liver, like every other organ, is subject to inflammation. It is exposed to venous congestion from the interrupted return and flow of blood in diseases of the heart, § 81; and it is subject to bilious congestion from obstructed gall-ducts. This organ is also liable to other diseases, which are common to it with several other viscera, as encephalosis, scirrhus, tubercles, hydatids; and it is exposed to others, peculiar to itself, viz. those termed the *fatty liver* and the *cirrhosis*.

1960. M. Andral correctly observes — " There is scarcely any affection of the Liver which has not been designated hepatitis. In my opinion, there is scarcely any which has not arisen from an injury which has first induced a state of hyperæmia. For example—four persons are exposed to a blow over the liver: one has an abscess; a second, cancer; a third, hydatids; a fourth, hypertrophy[1]." M. Cruveilhier makes a similar observation[2].

1961. No organ is so susceptible of changes of size and form. Under the influence of the compression from ascites, the Liver sometimes shrinks greatly; and it is sometimes marked by the tight lacing of stays. In case of enlargement, it may encroach upon the thorax, the left hypochondriac, or the right iliac, region.

1962. To the preceding list must be added obstruction of the gall-ducts, and it is complete for all practical purposes.

1963. The diseases of the Spleen and Pancreas require but a cursory notice. The former organ is apt to be enlarged in intermittent fever; § 600; 602. The diseases of the Pancreas are very obscure.

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[1] Anat. Path. t. i, p. 606.

[2] Anat. Path. iii^e livraison.

I. DISEASES OF THE LIVER.

I. INFLAMMATION.
  1. *Injection.*
  2. *Softening.*
  3. *Induration.*
  4. *Enlargement.*
  5. *Abscess.*
    1. *Solitary. This may open*
      1. *Externally.*
      2. *Into the Gall-Bladder or Ducts.*
      3. *Into the Stomach or Intestines.*
      4. *Into the Bronchia.*
      5. *Into the Abdomen.*
      6. *Into the Pleura.*
      7. *Into the Pericardium.*
    2. *Numerous.*

II. CONGESTION.
  I. *Venous.*
    1. *Causes.*
    2. *Effects.*
  II. *Bilious.*
    1. *Causes.*
    2. *Effects.*

III. ENCEPHALOSIS.
  1. *Solitary.* 2. *Diffused.*

IV. SCIRRHUS.
  1. *Solitary.* 2. *Diffused*

V. TUBERCLES.

VI. HYDATIDS. They may escape—
  1. *Through the Abdominal Parietes.*
  2. *Through the Stomach or Intestine.*
  3. *Through the Bronchia.*
  4. *Into the Peritonæum.*
  5. *Into the Pleura.*

VII. FATTY LIVER.

VIII. CIRRHOSIS.

II. DISEASES OF THE BILIARY DUCTS.

OBSTRUCTION.

1. *By Inflammation.*
2. *By Calculi.*
3. *By External Pressure.*

III. DISEASES OF THE PANCREAS.

IV. DISEASES OF THE SPLEEN.

I. DISEASES OF THE LIVER.

I. INFLAMMATION.

1964. I. *The History.* Inflammation of the Liver may arise from ordinary causes, as exposure to wet and cold; from blows or falls; and from constitutional causes, as disease of some other organs.

1965. II. *The Symptoms* consist in local pain, augmented by pressure, and by percussion; sometimes the border of the organ is to be felt; sometimes there is jaundice, ascites, or anasarca. There may be little febrile action; pain of the right shoulder does not belong to hepatitis; but the condition of the stomach and bowels is generally deranged, and there are anorexia, nausea, sickness, constipation, and a colourless state of the fæces, and the urine is frequently high-coloured.

1966. III. There is considerable tolerance of loss of blood, and this becomes a useful diagnostic.

1967. IV. *The Morbid Anatomy* consists of

1. *Injection.*
2. *Softening.*
3. *Induration.*
4. *Enlargement.*

But, besides these states, there is a fifth, which requires particular notice. This is

5. *Abscess.*

1. *Solitary Abscess.*

1968. *The Symptoms* of this termination of hepatitis occasionally resemble *Intermittent Fever;* but in other cases they are very obscure, and the occurrence of suppuration is not suspected until the abscess points, or the pus appears externally. The pus may issue by an opening—

1. *In the Hepatic Region.*
2. *Into the Gall Ducts.*
3. *Into the Stomach or Intestines.*
4. *Into the Bronchia.*

1969. This appearance of pus is known to arise from hepatic abscess, by being associated with the previous history and symptoms. The abscess sometimes bursts into—

1. *The Peritonæum,*
2. *The Pleura, and*
3. *The Pericardium;*

an event which can only be conjectured from the occurrence of some sensation, as of rupture, and by the appearance of symptoms of inflammation of one or other of these several membranes.

2. *Numerous Abscesses.*

1970. This form of hepatic disease occurs, like similar abscesses in other parts, in cases of *Phlebitis.*

1971. *The Treatment* of Inflammation of the Liver consists in the administration of blood-letting, general and local, of mercury, internally and externally, of saline aperients, most actively and energetically, in the acute form, and more mildly but perseveringly, in the more chronic form of the disease.

1972. In its chronic stage, the alcoholic lotion, § 1706, or a seton, is of great advantage. With these remedies a course of the Harrowgate, or of the Cheltenham, water, or a *similar* remedy at home, must be conjoined.

1973. The full warm-water enema, § 610, given night and morning, or every morning, is a remedy of great efficacy in all diseases of the Liver.

II. CONGESTION.

1. *Venous.*

1974. Venous Congestion of the Liver usually arises from disease of the heart impeding the flow of blood from the hepatic vein. It leads to enlargement of the Liver, to dropsy, and perhaps to icterus. See case, § 82—.

1975. The most vivid light has been thrown upon the *forms* assumed by congestion of the Liver by the labours of Mr. Kiernan. That congestion usually existing in the *hepatic vein*, and this in the *centre* of each lobule or acinus, its *first* stage is denoted by *circular* spots of redness round that centre, and its *second* stage by these variously coalescing together, appearances which are shewn very beautifully in Mr. Kiernan's drawings.

1976. The appearances produced by congestion of the portal vein may be produced artificially by injecting this vein forcibly in the dead subject.

2. *Bilious.*

1977. Bilious Congestion of the Liver arises from obstructed gall-ducts, and leads to enlargement of the Liver, to dropsy, and emaciation, and is attended by icterus.

III. ENCEPHALOSIS.

1978. I. *The History.* This disease is extremely insidious, and ultimately induces symptoms only by its size and pressure.

1979. II. These *Symptoms* are uneasiness and oppression in the epigastric and hypochondriac regions, augmented by food, relieved by purgatives. The countenance is *pallid* and thin, and there is general and progressive emaciation, with ascites and anasarca, and very frequently with icterus. The enlargement of the Liver, and, at length, even its irregularities of surface, are felt on a careful examination.

1980. *The Symptoms* are sometimes merely those of hypochondriasis. A careful examination should be made in every such case.

1981. III. *The Morbid Anatomy* consists in the presence of Encephaloid Tubera, which may be few in number, and confined to the Liver, or, what is more frequent, *diffused* over this and various other organs. These tumors compress, in different instances, a large blood-vessel, a large gall-duct, the vena portæ; inducing, respectively,—

1. *Partial Atrophy.*
2. *Icterus.*
3. *Ascites; Anasarca.*

1982. The ascites is probably occasioned, in some instances, by irritation of the portions of the peritonæum adjacent to the hepatic tumor or tumors; and effusion into the thorax has arisen in the same manner. Other diseases, as of the heart and of the lungs, are also occasionally induced by hepatic encephalosis, besides the occurrence of the same morbid change in various organs. In fact, few diseases, as I have observed already, are single or simple.

IV. SCIRRHUS.

1983. *The Symptoms* of Scirrhus of the Liver are similar to those of Encephalosis of this organ. The countenance is rather *sallow* than pallid, and there is earlier emaciation. The hepatic tumors are usually smaller than those of Encephalosis.

V. TUBERCLES.

1984. Tubercles of the Liver are characterized by no symptoms except those of Tubercles, and of disease of the Liver in general.

VI. HYDATIDS, OR ACEPHALOCYSTS.

1985. This affection may be suspected when there is enlargement of the Liver, unequally developed, perhaps circumscribed, and then perhaps fluctuating; icterus, ascites, anasarca, may be superadded[1].

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[1] In this and similar cases a puncture may be made by a minute trocar, in order to ascertain the nature of the contents of the tumor This manœuvre was recommended, in external tumours, by the late Mr. Hey of Leeds. I believe I was the first to propose it as a diagnostic in effusion into the thorax; See 1589.

1986. Hydatids of the Liver may be expelled through—

1. *The Intestinal Canal,*
2. *The Bronchia ;*

or they may escape into

1. *The Peritonæum,*
2. *The Pleura ;*

and then there is sudden acute inflammation.

1987. *The Morbid Anatomy* consists of the various distortion and enlargement of the Liver by cysts and hydatids.

VII. THE FATTY LIVER.

1988. In this case the Liver is enlarged, leaves a layer of oily substance on the scalpel, renders paper oily and transparent when warmed, and burns in the flame of a candle when its aqueous particles are evaporated; it sometimes swims upon water. It is unattended by icterus. It occurs principally in

Phthisis. § 1696.

VIII. CIRRHOSIS.

1989. This disease consists of diminution and deformity of the Liver, which is dense, granular, wrinkled, and, as its name imports, of a yellow colour. It is uniformly attended by ascites, § 1079 ; II ; but without icterus.

II. DISEASES OF THE BILIARY DUCTS.

1990. The only disease of the Biliary Ducts which can be detected during life is

OBSTRUCTION ;

and this may arise from a great variety of causes, as

1. *Thickening of the Ducts themselves.*
2. *Calculi ; or viscid Bile.*
3. *The Compression of Hepatic Tumors.*
4. *The Compression of a Tumor of some adjacent Organs.*
5. *Inflammation of the Duodenum.*
6. *A loaded state of the Colon.*

1991. *The Symptom* common to *all* these cases is *Icterus;* those peculiar to *each* have been already detailed, with the exception of

BILIARY CALCULI.

1992. I. *The History and Symptoms.* Biliary Calculi induce no symptoms, except when they obstruct the hepatic or the cystic ducts; they may long exist in the gall-bladder or cystic duct without symptoms. In the former case, they may induce *sudden paroxysms,* or confirmed suffering, of the kind about to be described.

1993. The paroxysm consists of the most excruciating pain, and perpetual sickness and vomitings; these are frequently *preceded* by *rigor* and *followed* by *icterus;* the bowels are constipated, the fæces pale, and the urine scanty and deep-coloured[1].

1994. II. *The Treatment* consists in a free state of the bowels, kept up by the oleum ricini and warm-water enemata; opiates for the pain; local bleeding for inflammation, &c.

1995. The *continued pain* is attended by tenderness, extending from the region of the gall-bladder over the hepatic region, and by icterus; and eventually the liver itself becomes affected with inflammation, bilious congestion, and enlargement.

1996. There is a fact, a reference to which is essential to the completion of the diagnosis of diseases of the liver and its appendages: it is that of

Rupture of the Gall-Bladder.

1997. Such cases are mentioned by many authors, and recently by M. Cruveilhier and M. Andral, and such a case lately occurred in the practice of my friend Mr. Cox.

1998. *The Symptoms* are those of the most sudden and acute *Peritonitis*: excruciating pain and tenderness; sickness; sinking; &c. and, in a word, the symptoms observed in perforation of the stomach or intestine; § 1895—.

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[1] It is extremely important to remark that precisely similar symptoms have originated from a disordered and loaded state of the colon.

III. DISEASES OF THE PANCREAS.

1999. The Pancreas is sometimes found of a redder colour, and denser texture, than natural, or affected by suppuration. It may be scirrhous, or compressed by scirrhus. But *the Symptoms* are unknown, and, to this day, the diseases of the Pancreas are of as little moment in a therapeutical point of view, as they are rare in their occurrence.

IV. DISEASES OF THE SPLEEN.

2000. The diseases of the Spleen are exceedingly obscure: they may be viewed as only forming a part of a previous disease, as

1. *Typhus.*
2. *Intermittent.*
3. *Purpura, &c.*

or as constituting a primary disease, as

I. INFLAMMATION, inducing
  1. *Changes in volume, consistency, colour;*
  2. *Suppuration.*
    1. *Diffused.*
    2. *Abscess.*

II. ORGANIC DISEASE.
  1. *Tubercles.*
  2. *Encephalosis.*
  3. *Cysts.*
  4. *Hydatids, &c.*

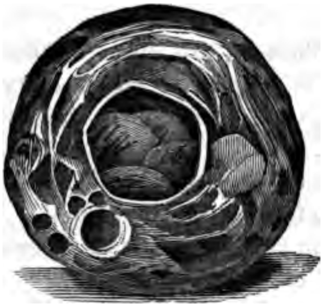
I. INFLAMMATION.

2001. Inflammation of the Spleen is usually attended by obscure pain and scarcely any symptoms. It has been supposed to give origin to phenomena of an *aguish* or *intermittent* character. It is principally to be detected by a careful *examination:* there is sometimes tenderness, sometimes a perceptible tumor; sometimes without tumor, the sound of the posterior and lowest part of the left side of the chest is dull, though the respiration is perfect. The *Treatment* is that of topical inflammation.

II. ORGANIC DISEASE.

2002. Organic Disease of the Spleen is easily detected when there is enlargement, by which alone, indeed, it seems to affect the general system.

2003. I may here insert a sketch of Hydatids, taken from Baillie:



CHAPTER VI.

OF THE DISEASES OF THE URINARY ORGANS.

2003. FEW diseases are more frequent, or more practically important, than those of the Urinary Organs, viewed as primary, and as secondary; or as causes, and as effects, of other diseases.

2004. Organic disease of the kidney sometimes leads to the suppression of its secretion, and this to comatose and other diseases; in other cases, such disease leads to albuminous urine and to dropsy.

2005. Derangement of the stomach equally leads to derangement of the functions of the kidney, and to the deposit of various calculi, and their train of painful and dangerous effects.

2006. In other instances, the function of the kidney becomes deranged independently of previous derangement of other organs, or of organic change in the kidney itself, but probably from hereditary predisposition, as in Diabetes.

2007. All diseases modify the secretion of the urine, from Fever to those affections which must still be acknowledged, and which are termed Nervous. The periods of digestion; each kind of diet, of beverage, and even of water; each change of the temperature and moisture of the atmosphere; has its effect upon the secretion of the kidney. Bodily exercise and certain mental emotions also have an obvious and immediate influence in diminishing or augmenting the secretion of urine.

2008. It can no longer, therefore, be matter of surprise that nephritic affections are so frequent; and we have still to add to the list, those which affect the bladder, the prostate, and the urethra, and the general mucous lining of the urinary organs.

2009. All these are affections of one system, and one with the general system.

2010. It will be my object, as usual, in this Chapter, to disencumber the subject of useless, or almost useless, refinements, and to present to the young practitioner as simple and practical a view of the subject as possible; referring to the incomparable treatises of Dr. Prout and Sir B. Brodie for further information of a minuter kind.

2011. It is interesting to remark the influence,—1. of disease of one part of the urinary organs over the functions, and, ultimately, over the structure of others; 2. of diseases of the spinal marrow over the secretion of the kidney; and 3. of affection of the urinary secretion over the state of the brain. See §§ 1218—1259; p. 309, note, &c.

I. THE DISEASES OF THE KIDNEY AND URETER.

I. THE ORGANIC.

I. INFLAMMATION.

1. *Injection.*
2. *Enlargement.*
3. *Softening; Induration.*
4. *Suppuration.*
    1. *Abscess.*
    2. *Purulent Infiltration.*

II. GRAVEL AND CALCULUS.

I. *The Diathesis and kinds of Deposit and Gravel.*
1. *The Lithic.*
2. *The Phosphatic.*

II. *The different kinds of Calculus.*

III. GRANULATED KIDNEY.

Effects:
1. *Albuminous Urine.*
2. *Dropsy; &c.*

IV. ORGANIC DISEASES.
  1. *Cysts.*
  2. *Encephalosis.*
  3. *Tubercles.*
  4. *Hydatids.*
  5. *Matière Colloide.*

II. THE FUNCTIONAL.

I. SUPPRESSION OF URINE.
  1. *Causes.*
  2. *Effects.*

II. DIABETES.

III. MORBID SECRETIONS.
  1. *Albumen.*
  2. *Excess of Urea.*

IV. MORBID ADMIXTURES.
  1. *Mucus.*
  2. *Pus.*
  3. *Blood*

II. THE DISEASES OF THE BLADDER, PROSTATE, AND URETHRA.

I. OF THE BLADDER.

I. INFLAMMATION.
  1. *Injection.*
  2. *Ulceration.*

II. CALCULUS.

III. NERVOUS AFFECTIONS.
  1. *Irritability.*
    1. *Immediate.*
    2. *Sympathetic.*
  2. *Paralysis.*

IV. RETENTION OF URINE.

II. OF THE PROSTATE.

I. INFLAMMATION.
  1. *Tenderness.*
  2. *Enlargement.*
  3. *Abscess.*

II. CALCULUS.

III. OF THE URETHRA.

I. STRICTURE.
Effects.
II. SYMPATHETIC STRICTURE.

I. THE DISEASES OF THE KIDNEY AND URETER.

I. THE ORGANIC.

2012. I. *The History.* The *causes* of Nephritis may be constitutional, as *gout* or *rheumatism;* seated in the kidney itself, as calculus; external violence, as a fall, a blow, violent riding; or exposure to wet and cold; some medicines, as turpentine; &c. The attack of Nephritis may be acute, insidious, or chronic; a frequent *effect* is the formation of a calculus; and, through its medium, *gout* and *calculus* are frequently connected.

2013. II. *The Symptoms* are local pain and tenderness. These are felt on pressure, or percussion; or, if the patient makes a quick movement, or experiences a shock, as in making a false step in walking.

2014. The examination is best made by placing the patient accurately on the back, and pressing the fingers between the short ribs and the ilium, the thumb being opposed to them upon the corresponding part of the abdomen: in this manner the kidney is really between the thumb and the fingers, and can be examined most distinctly, and sensibility and tumour are readily detected; if the patient be not in bed, pain and tenderness are frequently detected by *percussion.*

2015. With these symptoms are usually conjoined, fever; nausea and sickness, retching and vomiting; colicky pains, constipation; pain in the loins, extending into the iliac region—in fact, along the ureter; symptoms of irritation of the bladder or cervix; various morbid appearances of the urine, as deep colour, fœtor, deposites, mucous, puriform, sanguineous admixtures.

2016. III. *The Organic Changes* in Inflammation of the kidney are—

1. *Injection;*
2. *Enlargement;*

3. *Softening, or Induration;*
4. *Suppuration, assuming the forms of—*
    1. *Abscess,*
    2. *Infiltration.*

2017. *The Symptoms* of *Abscess* are rigors, fever, and perspiration, in irregular paroxysms, resembling *Intermittent*, or *Hectic*. Mucous or puriform sediments are observed in the urine, which is frequently deep-coloured, and of an ammoniacal odour; and there is great irritation of the bladder and urethra.

2018. Nephritic Abscess may point and burst externally; or it may penetrate and open into the abdomen, and induce sudden, severe, and fatal peritonitis.

2019. Nephritis, however confined to one kidney at first, usually invades both in its course.

2020. IV. *The Treatment* consists in *general*, but especially in *local*, *blood-letting*, repeated according to the degree and urgency of the symptoms: the mode of blood-letting already recommended § 335, may be adopted; the result will teach us how to proceed. The *cupping* instrument should not be applied immediately over the kidney; but a little above and below, otherwise the *mechanical* injury does harm; see § 1072. The general or local remedy must be repeated according to its effect on the symptoms of the disease and the condition of the system.

2021. Fomentations and poultices applied over the region of the kidney are extremely useful. Castor oil is the best aperient. The diet should consist of barley-water, or other mucilages. The warmth of bed; perfect quiet and rest, are very essential.

II. CALCULUS.

2022. I. *The History*. Calculus is frequently the *cause*, and as frequently an *effect*, of the disease last noticed; it is the latter especially, when *Gout* or *Rheumatism* is the cause of Nephritis.

2023. But Calculus is apt to be formed in the kidney, in the circumstances of those constitutional derangements which have been denominated the *calculous Diathesis*, of which the principal are—

1. *The Lithic.*
    1. ***With Yellow, Red, or Lateritious, or Pink Deposites of Lithate of Ammonia.***
    2. ***With the formation of Red Gravel, or Crystals of Uric or Lithic Acid.***
2. *The Phosphatic.*
    1. ***With the formation of White Gravel, or Crystals of Phosphate of Magnesia and Ammonia.***
    2. ***With the White Sediment of the*** MIXED ***Phosphates of Magnesia and Ammonia, and of Lime.***

2024. 1. The *first* of these is associated with high living, dyspepsia and gout; and is denoted by an *acid* state of the urine, readily detected by litmus paper, red, lateritious, or pink deposites of lithate of ammonia, and afterwards by the appearance of crystals of uric or lithic acid, or the *red gravel.* This diathesis prevails in childhood, and about the age of forty.

2025. There is a constant disposition to change from the lithic to the phosphatic diathesis: the urine becomes pale; there is a disposition, from slight causes of disorder, to deposit mixed lithic and phosphatic sediments, or an iridescent *pellicle* of triple phosphate forms upon its surface. At length the urine becomes *alkaline,* and crystals of the triple *phosphate of magnesia and ammonia* are formed, constituting the *white gravel.*

2026. Under the influence of these two diatheses, the lithic acid calculus and the triple phosphate caclulus are formed. But, besides these, there are two other kinds of diathesis and of calculus to be briefly noticed in this place:—

2027. 1. The crystals of the triple phosphate are apt to be changed for a pulverulent deposite of that phosphate mixed with the phosphate of lime; and the same mixture constitutes the *fusible calculus.* The constitutional and nephritic symptoms are extremely severe; the urine soon putrefies, with the evolution of ammonia. A fall upon the back, an injury done to any part of the urinary organs, may excite this diathesis and its effects; and all the other forms of calculous diathesis tend to pass into this.

2028. 2. The other form of diathesis is that in which the *mulberry calculus*, or that consisting of *oxalate of lime*, is formed.

2029. II. *The Symptoms* of Nephritic Calculus, independent of Inflammation, are excruciating pain in the region of the kidney and along the ureter; incessant nausea, vomiting, and retching; pain and retraction of the testis; pain in the inside of the thigh; dysury; strangury. The urine is high-coloured; acid or alkaline; mixed with mucous, puriform, or sanguineous deposition.

2030. The paroxysm is of various severity and duration: gravel or a small calculus may pass, with perfect relief; or there may be the transition from *irritation* into *inflammation*.

2031. III. *The Varieties* of Calculus may be thus enumerated and arranged for practical purposes:—

1. *The Lithic or Uric Acid; or the Light-brown.*
2. *The Triple Phosphate of Magnesia and Ammonia; or the White.*
3. *The Mixed Phosphates of Magnesia and Ammonia, and of Lime; or the Fusible.*
4. *The Oxalate of Lime; or the Mulberry.*
5. *The Alternating.*

2032. The last of these is the most interesting, in a pathological point of view: the *nucleus* in such calculi is most frequently lithic acid, rarely the phosphates; these, on the contrary, generally form upon some nucleus, and are seldom covered by other depositions. Indeed, Dr. Prout has deduced, from his accurate observations, the following *Law*, upon this subject: "that a decided deposition of the mixed phosphates is not followed by other depositions." The *tendency*, in the *diathesis*, deposits, gravel, and calculous depositions, is always *from* the lithic *to* the phosphatic.

2033. IV. *The Treatment* depends upon the *Diathesis:*

2034. 1. The *Lithic acid* diathesis, §§ 2023, 2024, requires mild *ant-acid* remedies; potass, soda, and magnesia have been used principally; potass is to be preferred to soda, because its combinations with the lithic or uric acid are more *soluble* than those of soda; ten grains of the *carbonate* may be taken three or four times a day, until the deposits or symptoms disappear; the diet, see § 2024, should be of the mildest kind, and in moderate quantity.

2035. 2. The *Phosphatic* diathesis, § 2025, requires an opposite mode of treatment: mild acids, as very dilute muriatic acid; acidulous vegetables, as apples, oranges; a vegetable diet, are to be prescribed; watching the effect upon the urine and symptoms.

III. GRANULATED KIDNEY.

2036. I think it important to refer, once more, in this place, to the important researches and discoveries of Dr. Bright on this disease and its consequences: viz.—

1. *Albuminous Urine.*
2. *Dropsy, &c.* See § 1061—.

IV. ORGANIC DISEASE.

2037. The principal organic diseases of the kidney are—

1. *Encephalosis.*
2. *Scirrhus.*
3. *The Matière Colloide.*
4. *Cysts.*
5. *Hydatids.*

2038. *The Symptoms* consist in some degree of tenderness; in tumor; in various *irritative* effects upon the bladder and the acts of micturition; and in deranged appearances of the urine.

II. THE FUNCTIONAL DISEASES.

I. SUPPRESSION OF URINE.

2039. I. *The History* involves that of some antecedent disease, of which this is, in truth, but a *symptom*, yet so serious and fatal a symptom, as to deserve peculiar attention. That disease is inflammation, or calculus, with their effects, and perhaps any form of organic disease of the kidney.

2040. II. *The Symptoms.* The suppression may be partial or complete ; its existence, its degree, and its distinction from *retention*, are determined, at once, by the *catheter*.

2041. From whatever cause it may arise, suppression of urine, if continued, speedily induces serious symptoms. There are fever, thirst, a taste of urine in the mouth, and the smell of urine in the perspiration ; to these, nausea, vomiting, sometimes of matters having a urinous odour, and hiccup, succeed ; and to these, dyspnœa, delirium, and eventually coma, and convulsions. See § 1257.

2042. Having ascertained the existence of suppression, the next point in the *diagnosis*, that which directs the mode of treatment, is the identification of the original disease. This is to be done upon the principles detailed in the former part of this chapter.

2043. III. *The Morbid Anatomy* consists in those morbid changes which constitute the *causes* of this affection, and its *effects*, especially congestion, or effusion into the ventricles, of the brain.

2044. IV. *The Treatment* is that of the original disease, and of the threatening affection of the head : local blood-letting, at the temples, and over the kidney, is the chief remedy ; diuretics ; aperients ; mercury ; are important auxiliaries.

III. DIABETES.

2045. I. *The History*. This disease seems to be hereditary. Its accession is highly insidious, the first symptom which excites attention being the augmented secretion of urine.

2046. II. *The Symptoms*. The pathognomonic symptom of Diabetes, is a saccharine state of the urine: the urine itself has a peculiar sweetish taste and smell ; and, if dropped and dried upon linen or paper, it is glutinous and adheres to the fingers. There is urgent thirst, and the appetite for food is excessive ; the mouth is clammy or parched, the tongue clean ; the skin is harsh and dry, and without perspiration ; the bowels constipated. There are pain and weakness across the loins ; frequent micturition ; diuresis ; irritation of the orifice of the urethra ; anaphrodisia. There are debility and emaciation ; œdema ; &c.

2047. *The Complications.* If these symptoms be not checked, there succeed—

1. *Hectic;*
2. *Phthisis;*
3. *Dropsy;*
4. *Apoplexy.*

2048. IV. *The Morbid Anatomy* is still very imperfectly known.

2049. V. *The Treatment* of Diabetes is very imperfectly known: repeated small blood-lettings; a strictly animal diet; opium; the bi-chloride (oxy-muriate) of mercury; have been recommended. *Local* blood-letting deserves a fair trial.

III. MORBID SECRETIONS.

2050. Dr. Prout describes the albuminous character of the urine as being of two kinds: the *chylous* and the *serous;* the former being far more frequent than the latter; but the *mixed* most frequent of all.

2051. 1. In the *Chylous* variety, the albumen is greater after meals. There is frequent micturition, and increased secretion or *diuresis.* There are craving for food, and other of the symptoms of Diabetes.

2052. 2. The *Serous* variety of this affection seems to be connected with augmented action in the system: the urine is not only albuminous, but occasionally mingled with blood itself; it is, in such cases, frequently associated with dropsy, and apt to terminate in apoplexy. See § 1047—.

Excess of Urea.

2053. For the discovery of this form of disease, we are indebted to Dr. Prout. There is *diuresis*, and the case has been termed *diabetes insipidus.* The urine is generally pale and without sediment, and is only characterized by the deposit of crystals of urea on the addition of nitric acid.

2054. There is a constant desire to void urine, both by night and day; there is sometimes dull pain in the back; at others, occasional irritation at the neck of the bladder and along the urethra. There is no affection of the skin, or pulse, no thirst, or inordinate appetite, or constipation. This affection seems, according to Dr. Prout, to be allied to those in which the urine is albuminous, or saccharine, or deposits the phosphates.

IV. MORBID ADMIXTURES.

2055. The Morbid admixtures with the urine are—

1. *Mucus*,
2. *Pus*, *or*
3. *Blood.*

They must be regarded merely as *Symptoms*, and denote inflammation, or irritation, of the—

1. *Kidney*,
2. *Bladder*, *or*
3. *Prostate.*

2056. The *source* of these admixtures with the urine is determined by the other *symptoms* in the first two cases, and by a careful *examination* in the third. If the symptoms be principally *nephritic*, § 2013—, and the blood be diffused through the urine, the kidney is the probable seat of the morbid secretion or effusion; if *vesical*, § 2060, with the discharge of blood only partially mixed with the urine, and towards the end of micturition, the bladder is probably that source.

2057. But, besides these cases, *Hæmaturia* occurs in some other circumstances: it is frequent, for instance, in—

1. *Typhus*,
2. *Purpura*,
3. *Scorbutus.*

2058. In one case, the patient discharged large quantities of dark-coloured blood, perfectly mingled with the urine, on every exposure to cold; the flow was as certainly arrested by the genial influence of warmth.

II. DISEASES OF THE BLADDER, PROSTATE, AND URETHRA.

I. OF THE BLADDER.

I. INFLAMMATION.

2059. I. Acute Inflammation of the Bladder is rare. The repulsion of gonorrhœa sometimes induces this disease, as, in other instances, it excites inflammation of the prostate or of the testis. Chronic Inflammation of the Bladder may arise from—

1. *Stricture of the Urethra.*
2. *Disease of the Prostate.*

2060. II. *The Symptoms* are a frequent desire to void urine, even when the bladder is empty, or strangury; and pain in the region of the bladder, especially on or after micturition. There is fever, with a frequent pulse, and a furred tongue. The urine deposits a mucous sediment, suggesting the designation *catarrhus vesicæ;* it adheres to the vessel, and is alkaline.

2061. III. *The Morbid Anatomy* consists in redness and dark-colour, and thickening of the mucous membrane, sometimes extending along the ureters and to the pelves of the kidneys, which are apt to be dilated, and to the substance of these organs, which are then enlarged, and perhaps become the seat of abscess or other disease. The internal membrane of the bladder is sometimes ulcerated. The bladder is sometimes perforated like the stomach, and the urine flows into the cavity of the peritonæum, or through a fistula into the rectum, or by an external opening.

2062. IV. *The Treatment.* In the *acute* form of this disease, local blood-letting, fomentations and cataplasms, and a diet and beverage restrained to linseed tea; the warmth and quiet of bed; the pulvis antimonialis; the oleum ricini; and warm-water enemata; are the principal remedies. In the *chronic* form, the uva ursi, the pareira brava, the buchu, have been added with advantage.

II. CALCULUS.

2063. I. *The History.* Vesical Calculi may be viewed in two points of light: that of—

1. *The Nucleus.*
2. *The exterior portion.*

The most common *nucleus* is a nephritic calculus, which has passed through the ureter. But any foreign substance introduced into the bladder may become the nucleus of calculus: thus a hazel nut, a portion of a bougie, has formed the centre of calculus deposition. The exterior portion is most frequently the triple phosphate, or the mixed phosphates. The phosphates are frequently deposited by the influence of the alkaline mucus of the bladder, when this is very abundant, mingling with the urine.

2064. II. *The Symptoms* vary in intensity exceedingly, according to—

1. *The Size and Surface of the Calculus;*
2. *The Condition of the Bladder;*
3. *The Condition of the Urine.*

It is obvious that a small, smooth calculus must induce less uneasiness than one that is rough and large: the same calculus will induce very different effects upon a healthy and upon an inflamed vesical surface: acid, and especially alkaline urine, adds another source of irritation to that of the calculus itself.

2065. 1. In the *milder* forms of this disease, there is a slightly increased desire to make water, and this act is followed by slight irritation of the cervix or along the urethra; the flow of urine is sometimes suddenly stopped, the calculus closing the orifice of the urethra; the urine is apt to be bloody after riding or other shaking exercise.

2066. 2. In the *severe* forms of calculus, the calls to make water become sudden, frequent, urgent, and irresistible, and liable to be induced by any change of position. There is a characteristic sympathetic pain, on voiding urine, at the termination of the urethra and glans penis. There is pain in the region of the bladder, in the groins, &c.

2067. The symptoms are aggravated still further, as the calculus enlarges, as the bladder inflames, and as the urine becomes alkaline. The desire to make water becomes urgent and incessant; the pains are extremely augmented, and the urine becomes ammoniacal, mucous, and sanguineous. There is sometimes spasmodic stricture of the urethra.

2068. These symptoms, and indeed any one or more of them, will lead to the use of the *sound*, by which alone the existence of calculus is rendered *certain*, and its *size* and *character* are, in some degree, ascertained: if the calculus be of recent formation, and the urine acid, we have further reason to conclude that it consists of lithic acid; if, on the contrary, the symptoms have existed long and are severe, and the urine is alkaline, we may conclude that the phosphates have begun to be deposited.

2069. III. *The Morbid Anatomy* of Calculus relates principally to—

1. *The Bladder itself;*
2. *The Kidney;*
3. *The Prostate.*

2070. 1. There are the usual appearances of inflammation in the mucous membrane of the bladder.

2071. 2 The pelvis of the kidney and the ureter are frequently augmented in size, and the kidney itself suffers variously from inflammation and other morbid changes.

2072. 3. The prostate is sometimes enlarged; in a few cases it has become ulcerated, and then the sufferings of the patient are extreme.

2073. IV. *The Treatment* in these cases comprises that of Calculus, § 2034, 2035, and that of Inflammation, § 2062, combined; in addition to which, opiates and opiate enemata must be administered for *pain*, with warmth, rest, and quiet.

III. NERVOUS AFFECTIONS.

1. *Irritability.*

2074. In some cases there is an irritability of the bladder which is entirely *mental:* the attention is directed to this organ, and the necessity for emptying it, however imaginary, becomes imperative; it is repeated; it becomes constant. The patient cannot travel, cannot visit, on account of this mental irritability in regard to the bladder.

2075. In other instances, the urine becomes acid, or alkaline; the bladder is unusually stimulated, and becomes irritable.

2076. Irritability of the bladder occurs in nervous patients, and in old persons, without disease.

2077. Irritability of the bladder is not unfrequently a *sympathetic* affection in

Disease of the Kidney.

2. *Paralysis.*

2078. Paralysis of the bladder occurs from disease or injury of the brain and spinal marrow; in typhus; in the sinking state; in old age. It leads to—

IV. RETENTION OF URINE.

2079. When Retention occurs from paralysis, it is very frequently accompanied by incontinence of urine, the cervix as well as the body of the bladder being affected. The region of the bladder should be carefully examined, and the *catheter* should be passed. Retention may also arise from—

1. *Stricture.*
2. *Disease of the Prostate, &c.*

II. DISEASES OF THE PROSTATE.

I. INFLAMMATION.

1. *Acute.*
    1. *Swelling.*
    2. *Abscess.*
2. *Chronic.*

2080. I. *The History.* In the *young*, the prostate is sometimes the seat of Acute Inflammation, with, or without, the repulsion of gonorrhœa. In the *old*, the gland becomes the seat of Chronic Inflammation.

1. *The Acute.*

2081. II. *The Symptoms* of the *Acute* Inflammation of the Prostate, are pain and uneasiness, and a sense of fulness, at the cervix vesicæ, in the perinæum, and in the rectum; frequent desire to void the bladder, with more or less of obstruction, strangury, and tenesmus. There is distinct tenderness on pressure by the finger introduced into the rectum, with some enlargement; the bougie determines the absence of stricture.

2082. If *Abscess* forms, these symptoms continue; the tenderness and swelling increase, and at length the abscess opens externally, into the urethra, &c. Meantime the dysury increases, with perpetual calls to make water, and there are rigors, fever, quickened pulse, hot skin, furred tongue, &c. With this affection there is frequently extensive

Disorganization of the Kidneys.

2. *The Chronic.*

2083. III. *The Symptoms* in Chronic Enlargement of the Prostate are, irritability of the bladder, and some obstruction to the passage of the urine through the urethra. There are frequent calls to void urine, and some difficulty in doing so, and it perhaps dribbles away, especially during sleep, and is, at best, but imperfectly expelled. From various causes, the symptoms may be aggravated, and the difficulty of passing urine becomes extreme, or there is complete *retention*. In extreme cases, the vesical mucous membrane may slough; the powers of life fail, the tongue becomes dry and black, and there is complete, and fatal, coma.

2084. V. The following *Complications* of this disease are apt to take place:—

1. *Abscess or Ulceration of the Prostate.*
2. *Inflammation of the Bladder.*
3. *The formation of Vesical, or Prostatic, Calculi.*
4. *Disease of the Kidney.*

These affections seem to be sometimes continuous from, at others, excited by, the disease of the prostate. The urine may be augmented or diminished in quantity, *suppressed* or *retained*[1], with the usual formidable or fatal symptoms, § 2040.

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[1] Sir B. Brodie has treated this subject in the fullest and most able manner, in his Lectures on the Urinary Organs; Lecture v.

The bladder is very often marked by hypertrophy of the muscular fibres.

2085. IV. *The Treatment* consists in local blood-letting, opiate and warm-water enemata, &c. It is, indeed, nearly the same as that for Cystitis, or Calculus.

II. CALCULI.

2086. Calculi of the Prostate produce similar symptoms. They are sometimes detected on examination with the finger or sound; sometimes fragments are discharged, and they are identified by their chemical composition, which consists principally of *phosphate of lime*, with animal matter.

III. DISEASES OF THE URETHRA.

I. STRICTURE.

2087. Stricture may be suspected whenever there is difficulty in passing the urine, and this flows in a diminished, flattened, spiral, or split stream: it is ascertained, with its situation and extent, by means of the *bougie*, &c.

2088. The principal *Effects* of Stricture are—

1. *Irritability of the Bladder.*
2. *Retention of Urine.*
3. *Abscess in Perinæo.*
4. *Dilatation of the Urethra.*
5. *Disease of the Prostate.*
6. *Inflammation of the Bladder.*
7. *Hypertrophy of the Muscular Coat of the Bladder.*
8. *Disease of the Kidneys.*
9. *Disease of the Testis.*

II. SPASMODIC STRICTURE.

2089. This affection may take place from exposure to cold, excess in wine, &c. There is difficulty or inability of micturition. This comes on suddenly, and sometimes goes off under the influence of sudorific and anodyne remedies. By repeated returns, it may lead to permanent stricture.

CHAPTER VII.

OF THE DISEASES OF THE UTERINE ORGANS.

2090. As the kidney, the bladder, the prostate, form a series or system of organs, the diseases of which mutually induce or aggravate each other; so do, in an especial manner, the uterus, the ovarium, the mammæ, &c. It is still an important inquiry how far remedies applied to one part of the series may relieve disordered actions in another. And the bond of connection which binds these several organs amongst each other, and with the whole system, still affords a subject of deep interest for renewed inquiry. There is no question that the head is frequently affected by the condition of the uterine system. This is seen in nymphomania. On the other hand, phthisis disposes to conception, and this frequently checks the progress of phthisis. And cancer occurs simultaneously in the mamma and in the uterus. These connections are still more readily traced in the physiology of the uterine system.

2091. I shall take this opportunity of relating a characteristic anecdote of the late Dr. Gregory, for which I am indebted to Dr. Paterson. Dr. Gregory was consulted, in the town of Ayr, in the case of a lady who had repeatedly miscarried, with dreadful hæmorrhage, in spite of every remedial means which could be devised by the first medical authorities in Scotland. Dr. Gregory saw the patient on one of these occasions; he prescribed for the hæmorrhagy, and, when this had been arrested, and the patient had sufficiently recovered, he examined the state of the mammæ, found them distended with milk, and directed a lusty infant to be applied, and nursed for nine months. The course of the uterine blood was directed into another channel. The lady became pregnant, the mother of a living child, and ultimately of a numerous family, her labours being unattended by hæmorrhagy!

2092. This history bears the stamp of genius. The fact itself is full of interest, and perhaps of more extensive application than may appear at first sight. May not the disposition to uterine hæmorrhagy, in other instances, be prevented by attention to the due adjustment of the mode and period of lactation?

2093. I have throughout these sketches called the attention to one important principle—that the diseases are not simple—not the affections of single organs—but of *systems;* and I again take the liberty of repeating this remark in connection with the diseases of the uterine organs.

I. THE DISEASES OF THE UTERUS.

I. THE ORGANIC.

I. INFLAMMATION.
  I. *Peritonæal.*
  II. *Parenchymatous.*
    1. *Injection.*
    2. *Softening.*
    3. *Induration.*
    4. *Enlargement.*
    5. *Suppuration.*
      1. *Abscess.*
      2. *Infiltration of Pus.*
      3. *In the Uterine Cavity.*
  III. *Of the Mucous Membrane.*
    1. *Amenorrhœa.*
    2. *Dysmenorrhœa.*
    3. *Formation of a False Membrane.*
    4. *Obliteration of the Uterine Orifices.*
    5. *Leucorrhœa.*
  IV. *Of the Cervix Uteri.*
II. THE IRRITABLE UTERUS.

III. FIBROUS TUMORS.
  1. *Under the Peritonæum.*
  2. *In the Substance of the Uterus.*
  3. *Under the Mucous Membranes.*

IV. CYSTS OR ENCYSTED TUMORS.

V. SCIRRHUS—CANCER.
  1. *In the Cervix Uteri.*
  2. *Involving the Cervix Uteri, and the Rectum, or the Bladder.*

VI. CORRODING ULCER.
  1. *Of the Cervix Uteri.*
  2. *Involving the Cervix and the Rectum, or the Bladder.*

VII. ENCEPHALOSIS—CAULIFLOWER EXCRESCENCE.

VIII. POLYPUS.

IX. INVERSION.

X. PROLAPSUS.

XI. ELONGATED CERVIX.

XII. ANTEVERSION.

XIII. RETROVERSION.

XIV. HYDATIDS, ETC. *distinguished from* PREGNANCY *and its Complications.*

II. THE FUNCTIONAL.

I. AMENORRHŒA.

II. DYSMENORRHŒA.

III. MENORRHAGIA.

IV. LEUCORRHŒA.

III. THE DISEASES OF THE OVARIA.

I. INFLAMMATION.
  1. *Injection.*
  2. *Suppuration.*

II. CYSTS OR ENCYSTED TUMOR, *distinguished from* ASCITES.

III. FIBROUS AND OTHER TUMORS.

IV. ENCEPHALOSIS.

III. THE DISEASES OF THE MAMMA.

I. INFLAMMATION.
- 1. *Tenderness and Tumor.*
- 2. *Abscess.*
  - 1. *Several.*
  - 2. *Deep-seated.*
  - 3. *Lacteal.*
  - 4. *Chronic.*

II. TUBERCULOUS SWELLING.

III. THE IRRITABLE MAMMA.
- 1. *With Tumor.*
- 2. *With Ecchymosis.*

IV. CHRONIC MAMMARY TUMOR.

V. ENCYSTED, HYDATID, AND OTHER TUMORS.

VI. ENCEPHALOSIS.

VII. SCIRRHUS—CARCINOMA.
- 1. *Of the Mammary Gland.*
- 2. *Of the Nipple.*
- 3. *Of the Skin.*
- 4. *Of the adjacent Lymphatic Glands.*
- 5. *Ulceration; Cancer.*

I. DISEASES OF THE UTERUS.

I. ORGANIC DISEASES.

I. INFLAMMATION.

1. *Peritonæal.*

2094. Inflammation of the Peritonæal Coat of the Uterus is denoted by pain, and tenderness on pressure, and, if it be confined to this texture, by the absence of other symptoms.

2. *Parenchymatous.*

2095. I. *The History.* Inflammation of the Parenchymatous Substance of the Uterus is very apt to be overlooked: it is sometimes induced by the sudden repression of the catamenia, from exposure to fatigue, wet, or cold; by marriage, &c.

2096. II. *The Symptoms* are pain and tenderness in the region of the uterus, aggravated by pressure, and in paroxysms, and at each return of the catamenial period. There are a sense of fulness,—bearing down; *strangury* or frequent calls to make water; some degree of *tenesmus*, or uneasy feeling about the rectum. There is pain in the back and round the ilium, augmented by coughing, straining, or walking. Great relief is afforded by quiet, and the horizontal position.

2097. III. *The Morbid Anatomy.* Besides these forms of Inflammation of the Uterus, this organ, in acute cases, undergoes a change of texture which leads to—

Softening;

in more chronic cases, there is—

Induration;

and, in other instances, there is—

Suppuration.

The pus may exist in—

1. *A distinct Abscess;*
2. *The state of Infiltration.*
3. *The Cavity of the Uterus;*
4. *The Adjacent Veins;*

and may escape—

1. *Per Vaginam;*
2. *Per Rectum.*
3. *Into the Abdomen; &c.*

3. *Of the Mucous Membrane.*

2098. Inflammation of the Mucous Membrane of the Uterus assumes several forms, which are respectively denoted by—

1. *Amenorrhœa;*
2. *Dysmenorrhœa;*
3. *The Formation and Expulsion of a False Membrane:*
4. *Obliteration of the Uterine Orifices.*
5. *Leucorrhœa.*

2099. 1. There seems to be no doubt that Amenorrhœa, which is a *symptom* in Chlorosis, Tubercle, and so many other diseases, may arise from Uterine Inflammation. The history and other symptoms establish the diagnosis.

2100. 2. Dysmenorrhœa is also, I am persuaded, a frequent effect of Inflammation of the Mucous Membrane of the Uterus.

2101. 3. The False Membrane, sometimes periodically formed and expelled by the Uterus, can only be compared to that observed in Croup, and in some cases of Eso-enteritis.

2102. 4. Obliteration of the Uterine Orifices may result from Inflammation, and prove the source of sterility.

2103. 5. Lastly, one form of Leucorrhœa seems also to have its origin in Inflammation of the Mucous Membrane of the Uterus.

2104. IV. *The Treatment* consists in *local blood-letting*, cupping over the sacrum, and leeches to the pudenda or os uteri; warm-water, and opiate, enemata; mercury; the mildest nutritious diet, the mildest aperients; the most perfect rest in the recumbent posture; warmth, with the most assiduous care to avoid excitement and exposure to cold draughts, &c. It is astonishing what perseverance in these measures will effect.

II. INFLAMMATION OF THE CERVIX UTERI.

2105. I. *The History.* This affection is induced by the same causes as Inflammation of the Uterus itself.

2106. II. *The Symptoms* consist in an exudation of *white mucus* from the cervix uteri, and tenderness *on examination* per vaginam, without tumefaction, or ulceration. The catamenia may be unaffected; or there may be dysmenorrhœa; or conception may be prevented. The act of passing indurated fæces, the shaking of riding, give pain. There may be some degree of irritation about the rectum, but more especially about the bladder, and there is frequently pruritis of the pudenda.

III. THE IRRITABLE UTERUS.

2107. I. *The History.* Dr. Gooch has described an interesting case of Uterine affection under this designation, neither inflammatory in its nature, nor tending to disorganization in its course[1]. It seems to arise from cases similar to those enumerated § 2095. It is very apt to be of a *protracted* character.

2108. II. *The Symptoms* consist in pain in the region of the uterus, aggravated by every movement of the body, and relieved by quiet and the recumbent position; and in exquisite tenderness of the os uteri. There is irritability of the general system.

2109. III. *Effects of Remedies.* There is great intolerance of loss of blood.

2110. IV. *The Morbid Anatomy.* This affection does not tend to disorganization. The os uteri is only slightly swollen.

2111. Attention to the general health, with rest, quiet, and opiates, constitutes the *Treatment* in this disease. Leeches applied to the os uteri afford great relief.

III. FIBROUS TUMORS.

2112. I. *The History.* The Fibrous Tumor is generally slow in its progress, and unattended by constitutional symptoms.

2113. II. *The Symptoms* are very obscure; but this disease is a frequent cause of *menorrhagia*[2], even when long-continued,—a fact important to be generally known. In the progress of the disease, the tumors become detectible on external examination, or on examination per vaginam and per rectum.

2114. III. *The Morbid Anatomy.* A fibrous texture sometimes occupies a great part of the uterus; the fibrous tumor may occur—

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[1] This affection may be compared to the *Irritable Breast*, the *Hysteric Affection of the Joints*, &c.

[2] In one case there was profuse menorrhagia during twelve years of unfruitful marriage; the patient then became pregnant; the tumors were distinctly felt in the parietes of the distended uterus; parturition was accomplished well; but the fibrous tumors became inflamed and suppurated; and this led to a fatal puerperal disease.

1. *Immediately under the Peritonæum;*
2. *In the Substance of the Uterus;*
3. *Under the Mucous Membrane.*

IV. CYSTS OR ENCYSTED TUMORS.

2115. This disease can only be ascertained when, by its size, it compresses some adjacent organ, as *the intestine, the bladder*, and so leads to a careful examination of the hypogastric region and per vaginam. It is unattended by constitutional symptoms. It is occasionally attended by a sense of *fluctuation.*

V. SCIRRHUS; CARCINOMA.

2116. I. *The History.* This terrible disease usually occurs after thirty or forty. It is extremely insidious.

2117. II. *The Symptoms* are *lancinating* pain, and local pains extending round the ilia and to the back, and even the loins; strangury; a sanguineous discharge; perhaps repeated abortion; and some obvious inroads made upon the general health,—especially the complexion, the strength, the flesh, &c. See § 269. Such circumstances should invariably lead to a careful examination *per vaginam.*

2118. All the symptoms become aggravated daily: the discharge becomes sanious, sanguineous, fœtid; the pains severer; the complexion paler, yellower; the loss of flesh and loss of strength greater; and a disposition to anasarca, and pains like those of rheumatism, supervene.

2119. On examination, the os uteri is found swollen, hard, irregular in form, open and circular; afterwards, it is jagged from ulceration. The real state of things is, however, only to be correctly known by means of *the speculum.*

2120. The *contiguous parts* are gradually involved in the disease, and a communication may be formed with *the rectum* or *the bladder.*

2121. *The Treatment* of this disease consists in quieting inflammatory action, and in lulling pains; local bloodletting, but especially opiates, with a regulated diet, a regulated state of the bowels, &c.

VI. THE CORRODING ULCER[1] OF THE CERVIX UTERI.

2122. This disease occurs unaccompanied by tumor, hardness, or other appearances of scirrhus. There is a sensation of heat or burning. The catamenia yield to a yellow, or sanguineous sanies. There is none of the lancinating pain observed in scirrhus. There are great pallor, debility, emaciation. The state of disease of the cervix is accurately ascertained only by the finger and the speculum *conjointly*.

2123. Like scirrhus and carcinoma, the corroding ulcer sometimes penetrates into the rectum, or the bladder, affording an exit to fæces, or urine, through the vagina.

VII. ENCEPHALOSIS.—CAULIFLOWER EXCRESCENCE.

2124. This disease may affect the *body* or the *cervix* of the uterus. In the former case, it occasions a tumor, perceptible in the hypogastric region, which is rather rapid in its progress, and not unattended by constitutional symptoms. In the latter case, it probably constitutes the disease which has been designated

The Cauliflower Excrescence.

2125. I. This affection was first noticed by the late Dr. Clarke, and is described by Sir C. M. Clarke. It has been recently considered more fully by the late Dr. Gooch, who considers it as fungus hæmatodes, or Encephalosis.

2126. II. The disease is the source of a watery discharge, and of frequent hæmorrhagies; it grows from the cervix üteri by a broad base, has a rough surface, and is insensible: if tied by a ligature, it returns. In one case it was readily removed in portions by the finger, without augmented hæmorrhagy. It destroys life by its malignant influence upon the constitution and by the loss of blood. The patient becomes pallid and feeble, and gradually, or suddenly, sinks. The examination with the finger should certainly be aided by that by means of the *speculum*.

VIII. POLYPUS.

2127. The first *Symptom* of Polypus is an alternate discharge of blood and serum only, usually mistaken for *menorrhagia*, or *leucorrhœa*, without local pain.

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[1] Sir C. M. Clarke, Diseases of Females, vol. i, p. 185. Baillie's Morbid Anatomy; Malignant Ulcer; Ed. by Mr. Wardrop, vol. ii, p. 323. Andral, Précis d'Anatomie Pathologique, t. ii, p. 683. &c.

2128. In *all* such cases, an examination should be made *per vaginam*. In Polypus, a round, smooth, firm, *insensible* tumor is felt; and the next object is to ascertain its *attachment:* this is—

1. *At the Fundus;*
2. *Beyond the Cervix;*
3. *Upon the Cervix.*

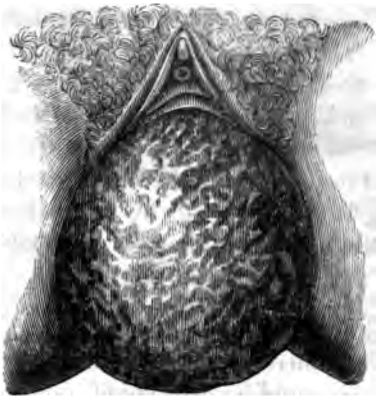
In the *first* case, the finger may be passed round the stalk; in the *second*, it can be passed half round only; in the *third*, its origin is distinctly felt[1].

2129. *The Remedy* is a *ligature.*

IX. INVERSIO UTERI.

2130. I. It occurred to Dr. W. Hunter, and it has occurred to others, to apply a ligature to the Inverted Uterus, mistaking it for Polypus! It occurred to Dr. Denman, and it occurred in Bartholomew's Hospital, to include a portion of the uterus in the ligature of a Polypus!

2131. II. Inversion of the Uterus, in its *simple* form, is distinguished by its occurrence immediately after parturition, and by its *sensibility.*



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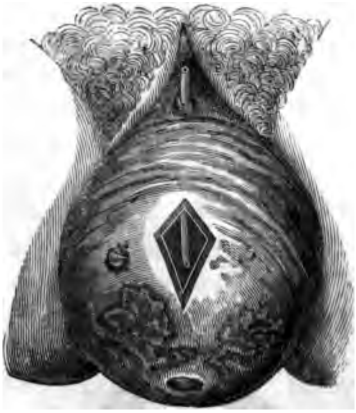
[1] Much of the character and diagnosis of polypus may be learnt by the use of the speculum—by means of which the operation for its removal has become, in the hands of my friend Dr. Heming, of infinitely greater facility and safety than before.—See the translation of the work of M. Dugès and Mme. Boivin, with Additions.

2132. III. When complicated with polypus, it is still distinguished by its *sensibility;* and if a ligature should ever give extreme *pain* or induce *vomiting*, it should immediately be removed, on the supposition of its having involved, or at least irritated, the uterus itself.

2133. If it cannot be reduced otherwise, bleeding to syncope should be tried, and reduction attempted during the syncope.

X. PROLAPSUS.

2134. Prolapsus is distinguished by observing that the os uteri occupies its lowest part; by ascertaining that the tumor is *sensible;* and by the fact that it may be returned into its proper situation.



XI. THE ELONGATED CERVIX.

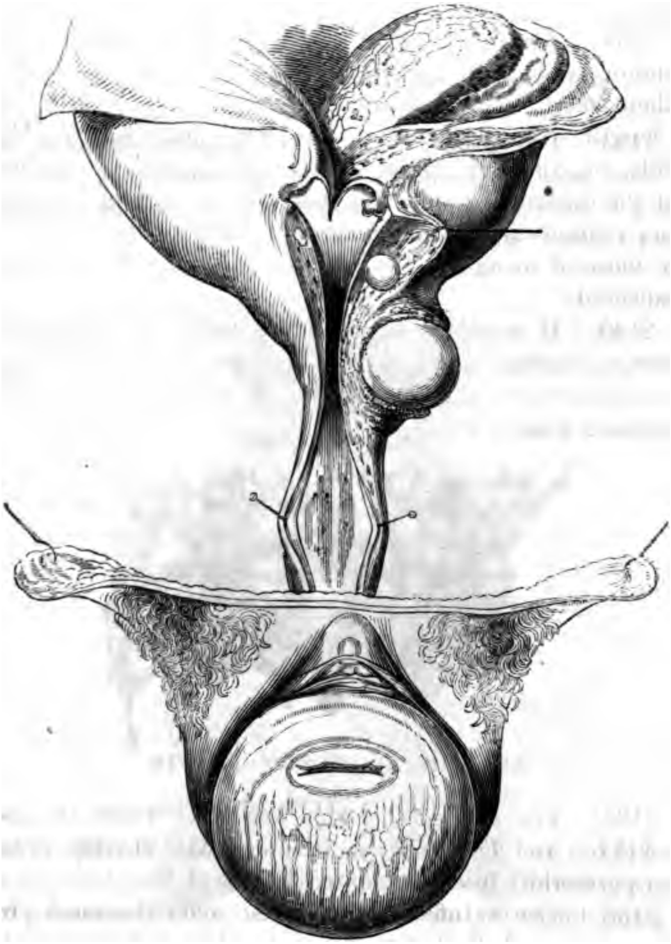
2135. The existence of this form of Uterine Disease, pointed out and figured by Lobstein and M. Cruveilhier, has been particularly noticed by Dr. Heming.

2136. The os uteri is discovered upon the most protuberant part of the tumor, through which a probe may be passed six inches or more into the uterus. The elongated neck of the uterus may be traced with the finger. This form of disease occurs—

1. *In Pregnancy;*
2. *In Hernia of the Bladder;*
3. *In Hernia of the Rectum;*
4. *In Ascites, &c.*

apparently from the influence of mechanical causes.

2137. The elongated Cervix Uteri is admirably shewn in the subjoined wood-cut, taken from Cruveilhier:—



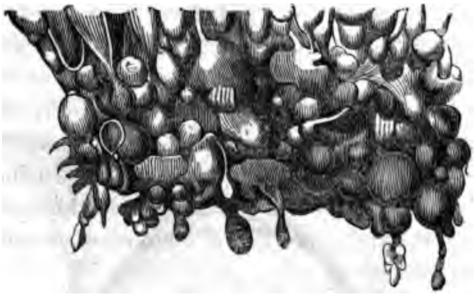
XII. HYDATIDS; ETC.

2138. The cavity of the uterus is sometimes distended by substances foreign to it in its natural state: these are—

1. *Hydatids.*
2. *Aqueous Fluid.*
3. *Air.*
4. *Calculus.*
5. *A Bony Mass.*
6. *A Dead Fœtus, &c.*
7. *Retained Catamenia.*

2139. *The Symptoms* of *Hydatids* may be given, instar omnium. There is a tumor in the region of the uterus, without *tenderness*, and without regularity in its progress. At length, with contractile uterine pain, a portion of the Hydatids, or, in other cases, of fluid, of air, &c. is expelled, and the disease is made manifest. There are, in the mean time, neither the constitutional symptoms of inflammatory, nor those of malignant disease: the pulse, the flesh, &c. are unaffected.

2140. It is chiefly important to notice this disease, in order to institute a comparison between it and pregnancy, the subject to be shortly noticed. It is represented in the subjoined wood-cut:—

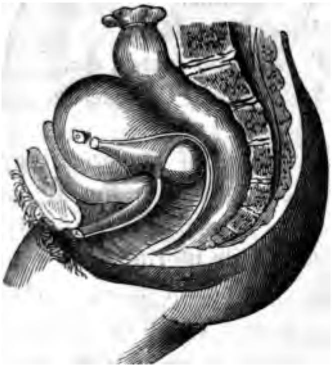


XIII. ANTEVERSION.

2141. I. *The History.* Anteversion of the Uterus arises generally from augmented fulness of the blood-vessels in some forms of Inflammation. Its exciting cause is frequently fatigue, effort, &c.

2142. II. *The Symptoms* consist in obstruction to the evacuation of the bladder and of the rectum.

2143. III. On *examination*, the os uteri is found pressing backwards upon the intestine, the fundus being thrown forwards upon the neck of the bladder.



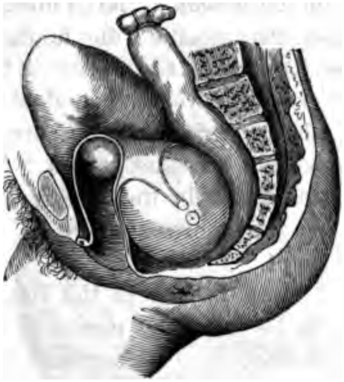
2144. Anteversion of the uterus may exist with far less inconvenience than Retroversion, and has, therefore, been far more frequently overlooked.

XIV. RETROVERSION.

2145. I. *The History.* Retroversion most frequently occurs from the *third* to the *fourth* month of pregnancy. It may also occur from enlargement of the uterus from other causes; as polypus. It is frequently induced by effort, blows on the loins, &c. It is generally sudden in its accession.

2146. II. *The Symptoms* are retention of urine, obstruction of the intestine, pain in the groins and loins, diminished hypogastric tumor; augmented symptoms of retention of the urine and of the fæces; &c.

2147. III. On *examination per vaginam*, the finger, passed upwards anteriorly, can scarcely reach the os uteri; posteriorly its fundus is felt pressing upon the rectum and sacrum. On passing the finger into *the rectum*, the fundus uteri is felt still more distinctly pressing upon the intestine. It is sketched and contrasted with anteversion, § 2144, in the accompanying wood-cuts:—



2148. To *complete the diagnosis*, the uterus must be replaced. The *catheter* must be introduced; the rectum must, if possible, be relieved: the fingers are then to be introduced into the vagina or rectum, and the fundus uteri pressed gently upwards. The symptoms then cease.

XV. PREGNANCY

2149. Is denoted by suppression of the catamenia, by sympathetic sickness, by gradually increasing tumor, first in the hypogastrium, then of the lower part of the abdomen, by a tumid and harder condition of the mammæ, with the development of the areola and follicles round the nipple, and by the movements of the fœtus.

2150. It is by this *assemblage* of symptoms that pregnancy is ascertained: the sudden suppression of the catamenia; the sudden attacks of morning sickness; the regularly increasing *hypogastric* tumor; the peculiar change in the mammæ and areola; can scarcely occur together without pregnancy.

2151. When, in addition to these symptoms, a tumor begins to be felt above the pubes; when the umbilicus, from being concave, becomes convex; when the movements of the fœtus are distinctly felt by the hand applied to the epigastrium; the existence of pregnancy is certain.

2152. When, on examination per vaginam, the cervix uteri becomes less and less distinct, and then obliterated;

when the body of the uterus is felt enlarged; when, the patient being in the erect position, the uterus raised quickly by the finger, and the fœtus made to float in the liquor amnii, its fall is felt, there is no remaining doubt of pregnancy, even though the other criteria were obscure. The last sign of pregnancy, which has been designated "ballottement" or *repercussion*, is also obvious in the *hypogastrium*, when the patient is placed on the elbows and knees. Dr. Heming is investigating this point.

2153. Lastly, when the beat of the fœtal heart, and the placental rush, can be heard by means of the stethoscope, the evidence of the existence of Pregnancy is complete.

2154. *The Complications.* It is important to remark that Pregnancy may be complicated with

1. *Disease of the Uterus;*
2. *Disease of the Ovarium;*
3. *Pelvic Tumors.*
4. *Retention of Urine.*
5. *Ascites.*

It will require the utmost attention to establish the full diagnosis in these complicated affections, since the distinction, when they occur in an isolated form, is not always perfectly easy.

XVI. PELVIC TUMORS, ETC.

2155. Tumors may form in any part of the pelvis, and may complicate Pregnancy, or any of the preceding or subsequent forms of disease; in Pregnancy itself, the fœtus may die and yet be retained for a time: the diagnosis may thus be very obscure; it can, indeed, only be perfectly established by the most careful examination, *per vaginam*, *per rectum*, &c. with the precaution of previously emptying the bladder by the *catheter*, and the rectum by large *enemata*. It would be encumbering this work to *imagine* every possible case of such complications, and to lay down *Rules* for the diagnosis of *each*. Anatomical and pathological knowledge, and *good sense*, must guide us.

II. THE FUNCTIONAL AFFECTIONS.

2156. The cases which I have enumerated as Functional Affections, are rather *symptoms* than real *diseases*, and ought, therefore, to be noticed in that relation. It may not be amiss, however, to state, in this place, under what circumstances they are most apt to occur.

I. AMENORRHŒA.

2157. This affection occurs principally in—

I. 1. *Febrile,*
   2. *Inflammatory, Diseases.*
II. 1. *Chlorosis.*
   2. *Tuberculous Disease.*
   3. *Inflammation of the Uterus.*
III. 1. *Defective Uterine Development.*
   2. *Pregnancy.*
   3. *Lactation.*

2158. Amenorrhœa is also a well-known sudden effect of exposure to damp or cold, or to mental emotions, during the flow of the catamenia.

II. DYSMENORRHŒA.

2159. This affection results principally—

1. *From Inflammation of the Uterus.*
2. *From Scybala retained in the Colon and Rectum.*

2160. In the *former* case there is occasionally the formation and expulsion of a layer of lymph. § 2098. The *latter* is an extremely frequent form of this painful malady. It yields to the daily employment of aperients and enemata.

III. MENORRHAGIA.

2161. The profuse flow of the catamenia depends chiefly upon two causes: the irritation of—

1. *A Fibrous Tumor of the Uterus.*
2. *Scybala in the Colon or Rectum.*

2162. The recurrence of the flow is frequently induced by fatigue or harass, bodily or mental.

IV. LEUCORRHŒA.

2163. This morbid affection is—

1. *Uterine.*
2. *Vaginal.*

2164. The *former* case may depend upon—

1. *Uterine Disease.*
2. *Constitutional Debility or Exhaustion.*

2165. The first is of various kinds, already noticed. The second is frequently induced by fatigue and harass, but by no cause so frequently as *undue lactation.* It may be conjoined, or may follow, or be followed by, sanguineous discharge. It frequently alternates with menorrhagia.

2166. Vaginal Leucorrhœa may arise from—

1. *Inflammation.*
2. *Inflammation of the Cervix Uteri.*
3. *Polypus, &c.*
4. *Hæmorrhoids.*
5. *Ascarides.*

2167. These various affections must be treated according to their nature or cause: local blood-letting for inflammatory action, a sustained mercurial course in dysmenorrhœa; the ergot in those forms of menorrhagia or uterine leucorrhœa arising from debility or exhaustion; astringent injections for vaginal leucorrhœa, are the principal remedies.

II. DISEASES OF THE OVARIUM.

I. INFLAMMATION.

2168. Inflammation of the Uterine Appendages has been already noticed, § 1899. That of the Ovarium is denoted solely by local pain and tenderness, the general system and the functions of other organs being scarcely influenced by this affection.

II. ENCEPHALOSIS, ETC.

2169. As inflammation of the Ovarium is merely characterized by *local* pain and tenderness, the present and other morbid growths are denoted by *local tumor*, detected by a careful *examination*, and the effects of *compression* on adjacent organs.

III. ENCYSTED TUMOR, ETC.

2170. This case includes—

1. *Cysts;*
2. *Numerous Cysts;*
3. *Hydatids.*

2171. It is distinguished by *tumor*, originating in the situation of the Ovarium, on *one side* of the abdomen, gradually enlarging, and leading to a tumor with *fluctuation*, of considerable, and even enormous, magnitude.

2172. This affection is distinguished from—

ASCITES

by the following signs: 1. it is generally *more tense*, and, when of moderate magnitude, *more protuberant*, *more defined;* 2. the sound is dull on percussion at the *prominent* part of the abdomen, whereas in Ascites it is sonorous at this part, from the floating of the intestines, whilst it is dull nearer the spine; 3. it is less changed by *posture*, whilst in Ascites the effusion falls to the lowest part of the abdomen in the erect, and to the anterior or posterior parts, in the prone or recumbent, positions.

2173. Ovarial cysts generally arise without any assignable cause; but Ascites usually depends upon some preceding organic affection, the diagnosis of which is, in itself, important: the principal of these are—

1. *Peritonitis;*
2. *Disease of the Heart;*
3. *Disease of the Liver;*
4. *Disease of the Kidney, &c.*
5. *The Loss of Blood;*
6. *Inveterate Chlorosis;*
7. *The Cachexiæ, &c. &c.*

See Chapter vi, p. 225.

III. DISEASES OF THE MAMMA.

I. INFLAMMATION.

1. *The Acute.*

2174. I. *The History.* Inflammation of the Mamma may occur from a blow, or similar external causes; but its most frequent source is that change which is wrought for the secretion of milk, after parturition, left unrelieved by the too tardy application of the infant to the breast.

2175. II. *The Symptoms* consist in swelling, tenderness, and pain, sometimes preceded by rigor and attended by fever. These symptoms may subside, or become attended by throbbing and augmented hardness, and tenderness, and eventually by glossy redness, and fluctuation, denoting the occurrence of *suppuration.* The most tender part at length *ulcerates,* unless the pus be allowed to escape through an artificial opening.

2176. III. *The Varieties.* Sometimes there are several successive abscesses, with much suffering, fever, and perspiration. Sometimes an abscess is formed very deeply, burrows, and forms several sinuses, requiring successive punctures by the lancet. In other, rarer cases, pus forms in contact with the ribs, leading to exfoliations of bone.

2177. IV. *The Treatment* consists in the prompt administration of an emetic, a purge, and of local blood-letting; and in freely relieving the mamma by suction.

2. *Lacteal Abscess.*

2178. This affection is not preceded by the symptoms of acute abscess; but a sense of tension is experienced, and a fluctuating tumor is felt extending from the nipple towards the circumference of the Mamma. The tumor is confined to this part. Its tension is augmented by the rush of milk when the infant is put to the breast. The cutaneous veins are large. If a puncture be made, several ounces of milk are discharged; and if this opening be small, the cavity is speedily filled again. Sometimes the skin ulcerates, and an opening is made, through which the milk flows during each act of suckling. This affection resembles Ranula in its nature[1].

3. *Chronic Abscess.*

2179. Sometimes pus is formed slowly, without previous redness, tenderness, pain, heat, rigor, or fever. In such a case, the operation for removing the mamma has been begun, and the pus has been accidentally evacuated by the scalpel! A careful examination may, in doubtful cases, detect fluctuation, and a puncture (p. 405, note) would make the nature of the case obvious.

II. TUBERCULOUS SWELLING.

2180. This disease is slow in its progress, unattended by pain, distinctly circumscribed, generally, though not always, solitary; it is usually accompanied by enlarged cervical glands.

III. THE IRRITABLE MAMMA.

1. *Without Tumor.*

2181. In this case the Mamma, or one or more of its lobules, becomes exquisitely tender and painful. The pain is often extended to the shoulder, axilla, inner side of the elbow, and the fingers, and sometimes along the side of the hip. The slightest examination augments the pain, which is sometimes such as to render the weight of the breast, or the position of the side affected, equally insupportable.

2182. This affection is augmented on the approach, and diminished on the recession, of the catamenia, which are generally irregular, deficient, or profuse.

2183. There is sometimes an alternate sensation of heat and cold, or darting like that of the tic douloureux. Sometimes both mammæ are affected.

2. *With Tumor.*

2184. In some instances the pain and tenderness are situated in a small, moveable *tumor*, varying from the size of a pea to that of a marble.

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[1] Sir Astley Cooper on the Diseases of the Mamma, p. 16.

2185. This tumor is solid and semitransparent, interwoven with fibres.

3. *With Ecchymosis.*

2186. With exquisite tenderness of the mamma, and pain down the inner side of the arm, there is, in this case, a degree of ecchymosis before and at each catamenial period. It exists in one large spot, whilst smaller and less vivid spots appear in other parts of the mamma. It declines at various periods after the cessation of the catamenia. It occurs in the young, and frequently in those in whom the mamma is large, and the constitution irritable.

2187. *The Treatment* consists in allaying the irritability of the system and of the organ affected, by mild aperients, tonics, opiates, diet, exercises, &c.

IV. CHRONIC MAMMARY TUMOR.

2188. I. *The History.* This affection, like that last mentioned, has a strict connection with the catamenia, being probably induced, and certainly aggravated, by sympathy with the uterine organs at the catamenial periods. It occurs principally in the young, single, or childless.

2189. II. *The Symptoms.* This tumor grows upon the *surface* of the mamma, either the anterior or posterior ; it is moveable over that surface, and lobulated to the touch ; it begins, and often continues long, without pain ; but it is sometimes painful, the pains extending to the shoulder, resembling the aching of rheumatism ; it is generally, but not always, free from tenderness to the touch. Its growth is slow ; its weight usually from one to four ounces ; but it is sometimes larger.

2190. III. *The Morbid Anatomy* The structure of this tumor is lobular, and it is enveloped in a membrane, both *similar* in appearance to those of the mamma itself.

V. CYSTS, HYDATIDS, ETC.

2191. These affections are distinguished by tumors, without pain or tenderness, but with tension, and, eventually, with fluctuation. Their accession and progress are slow. There are no constitutional symptoms. The disease gives no real uneasiness, until, becoming large, it is inconvenient from its bulk and weight. The external veins enlarge. The tumor is moveable upon the ribs and under the integuments.

2192. Cysts and Hydatids sometimes induce inflammation and ulceration. The system then suffers.

2193. The most certain criterion of the Encysted or Hydatid tumors, is *a puncture*. The escape of a limpid fluid satisfies the doubts of the surgeon and allays the fears of the patient. Both diseases are local, and free from malignancy.

2194. Cysts generally occur in *clusters*. Hydatids are distinguished by *containing* others produced by their internal surface.

2195. The preceding diseases are all free from malignancy in their character and tendency. Those which are next to be noticed are frightfully malignant and destructive, and arise from, or lead to, constitutional contaminations.

VI. ENCEPHALOSIS.

2196. I. *The History*. This disease occurs earlier in life than the terrific disease next to be noticed.

2197. II. *The Symptoms*. It is distinguished from it, by its rapid growth, its irregular form, its soft, doughy feel, its tendency to ulceration, the formation of fungus. At first, it is even and smooth on its surface, free from pain or tenderness, or discolouration, but soft and fluctuating. It soon acquires a fearful size and aspect; the surface is then uneven and discoloured, the feel quaggy. The system suffers: the patient has pallid prolabia, and is feeble and restless.

2198. The adjacent lymphatic glands, or some more distant part, internal or external, may be simultaneously affected.

VII. SCIRRHUS. CARCINOMA.

2199. I. *The History*. Scirrhus frequently occurs about the period of the cessation of the catamenia. It may be apparently spontaneous; or it may arise from a blow, or from the change in form and character of some other mammary disease.

2200. II. *The Symptoms.* This disease is circumscribed at first, little augmented in size, of singular hardness, somewhat tender, and accompanied by a peculiar lancinating pain. In its progress,

2201. 1. *The Nipple* frequently becomes fixed and drawn inwards;

2202. 2. *The Skin* becomes adherent and tuberculated;

2203. 3. The adjacent *lymphatic vessels and glands* become enlarged and hard.

2204. 4. Eventually, the skin *ulcerates*, and presents the appearance of frightful chasms, and perhaps fungous growths, and there is extreme suffering, and extreme acrimony and fœtor of the discharges.

2205. 5. The *whole system* is worn, and hectic; the complexion is 'jaune paillé,' and there is great emaciation.

2206. III. *The Treatment* consists in *excision*, or *opiates*.

CHAPTER VIII.

OF PUERPERAL DISEASES.

2207. In the early period of pregnancy, we witness the effects of a singular sympathy between the uterus and the stomach—a disease of *irritation*—under the form of sickness and vomiting.

2208. In the later periods of pregnancy, we have to witness the effects of plethora, and of compression upon the abdominal viscera and vessels. The enlarged gravid uterus occupies great space; and, in addition to this, the colon is frequently somewhat obstructed and becomes loaded.

2209. At the latest period of pregnancy and during parturition, there is frequently great fear of an affection of the brain, or spinal marrow, apoplexy or convulsions.

2210. After parturition, we encounter other circumstances, the effects of which are not less to be feared; the *immediate* effects of hæmorrhagy; sometimes convulsions.

2211. Nor are we secure, even when the immediate effects of parturition have passed away: the contracted uterus is more vascular than natural, and augmented in size; it is in a state *bordering* on inflammation: it is very apt, with its peritonæal covering, and its appendages, to take on actual inflammation: its internal surface is *exposed*, and the veins and lymphatics which take their origin or course from it may become inflamed: but, besides these events, we are frequently, very frequently, called to witness others which result from a state of intestinal load and irritation: nor do these complete the list; for, although the *immediate* effects of hæmorrhage may have ceased, others, *later* in their period of occurrence, and of a widely different character, frequently occur, and present some very formidable cases of puerperal disease.

2212. There is, besides, a series of *mixed* cases, to which I would very particularly draw the attention of my young readers.

2213. There is still another point to which I must draw the attention of my reader: there are *doubtful* cases, as well as *mixed* cases; and there will often be great difficulty, anxiety, and danger, in determining the question of general blood-letting. In every case in which it is decided that a vein is to be opened, let it be done in the erect position, the eyes turned to the ceiling of the room. In this manner, frequently *much less*, and frequently also, *much more*, blood will be taken, than it was previously contemplated to take: for the case may partake more of the nature of irritation, or of inflammation, than was supposed! The physician will derive much information, and the patient will be preserved from much danger, by adopting the plan which I have proposed. I am astonished to see how so plain, so simple, and so important a rule is either disregarded through supineness, or attempted to be put aside from motives which I forbear to mention. The plan which I have so often enforced is one of great safety, and replete with diagnosis.

2214. I shall now endeavour to present such an arrangement of Puerperal Diseases, in the order of their importance and frequency, as I have formed from long attention to the subject,—not in *hospitals*, which present a very unfair view of the subject, but in *private practice*,—not amongst the poor only, but amongst the middling and higher classes of society.

I. INFLAMMATION OF THE PERITONÆUM.
   1. *Of the Uterine Peritonæum.*
   2. *Of the Uterine Appendages.*
   3. *Of the Pelvic Peritonæum.*
   4. *Of the Diffused Peritonæum.*

II. INTESTINAL IRRITATION.
   1. *With Affection of the Abdomen.*
   2. *With Affection of the Head.*

III. EXHAUSTION FROM LOSS OF BLOOD.
  1. *With Reaction.*
  2. *With Sinking.*

IV. MIXED CASES.
  Puerperal Mania, &c.

V. SOFTENING OF THE UTERUS.

VI. INFLAMMATION OF THE LYMPHATICS.
  1. *Usually with Peritonitis.*
  2. *Without Peritonitis.*
  3. *With Pleuritis.*

VII. INFLAMMATION OF THE VEINS.
  1. *Adhesive.*
    1. *Uterine.*
    2. *Crural.*
  2. *Suppurative.*
    1. *Usually without Peritonitis.*
    2. *With Abscesses of the Brain, Lungs, Liver, Spleen, &c. the Joints, Cellular Membrane, Eye, &c. &c.*

2215. Before I proceed to detail the prominent symptoms of the morbid affections which I have thus enumerated, I would particularly impress upon my reader the importance of an accurate acquaintance with the

PUERPERAL STATE

when unattended by actual disease.

2216. There is frequently a degree of febrile action and of perspiration; yet, in some cases, carefully noted, there was *no* frequency of the pulse, *no* tenderness of the uterus: a degree of acceleration of the pulse, however, and a degree of uterine tenderness, *may* occur, and subside; but *either* of these symptoms should lead us to watch the patient with care, not to say anxiety. The physician should also make himself intimately acquainted with the ordinary *feel* of the *uterus*, and with the *appearances* of the *lóchia*, at various periods after parturition; and he should carefully study the phenomena, constitutional and local, of the effort to establish the secretion of the milk, and of the office of lactation.

2217. I now proceed to treat of

I. INFLAMMATION OF THE PERITONÆUM.

1. *Acute.*

2218. I. *The History.* Puerperal inflammation within the abdomen is usually introduced by rigor; but by no means always; neither are heat of skin, and headache, *essential* symptoms in this disease.

2219. II. *The Symptoms* vary somewhat with the *seat* and *extent* of the inflammation. This *begins* and may be nearly confined to—

1. *The Uterine Peritonæum,*
2. *The Uterine Appendages,*
3. *The Pelvic Peritonæum;*

but it may be diffused over

4. *The Abdominal Peritonæum.*

2220. These circumstances are only to be determined by a careful examination of the abdomen, and especially of the hypogastric and iliac regions. With the pain, there is tenderness on pressure, more or less *confined*, at first, to the former of these regions, and diffused afterwards, perhaps, over the abdomen, and varying in *degree.*

2221. The movements of the body, and of respiration, are more or less repressed; and there are frequently sickness and vomiting. The pulse quickens and frequently becomes small. The state of the *lochia* should be carefully noticed: it constitutes the *index* to the condition of the uterus: the lochia become scanty, or suppressed, and lose their healthy colour.

2222. III. *The Effects of Remedies.* We learn much of the nature of the disease, or of the extent and degree of the inflammation, and of the strength of the patient, by observing the effect of blood-letting in the perfectly erect position: in acute and extensive serous inflammation, much blood flows before syncope is induced: in some other diseases, and in other forms of inflammation, there is comparatively great susceptibility to the effects of loss of blood. In no case is this criterion more important than in the *puerperal* forms of these diseases.

2223. IV. *The Morbid Anatomy* consists in the effusion of *serum*, *lymph*, or *pus*, in various quantity, and over a various extent of surface.

2224. V. *The Treatment* is that detailed § 1826, modified according to the state of the system and degree of the disease.

2. *Chronic.*

2225. The Chronic form of Puerperal Peritonitis is usually confined to the uterine appendages, or to the pelvic peritonæum. The former case has been already characterized, § 1904; the latter may induce a fulness in some part of the pelvis, perceptible on an examination per vaginam, with compression and interrupted function of the bladder and rectum, and constitutional fever. The treatment is that pointed out § 1906[1].

II. INTESTINAL IRRITATION.

2226. I. *The History.* This affection, *the most common of puerperal diseases*, in its milder or severer forms, is not unfrequently ushered in by *severe* rigor: this is followed by febrile heat and the symptoms about to be mentioned.

1. *With Affection of the Abdomen.*

2227. II. *The Symptoms* in this case are diffused pain, and superficial and diffused, but often extreme, tenderness: the uterine region is not usually more tender or painful than the rest of the abdomen. There is frequently general tumidity, as well as tenderness.

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[1] In a case of this affection which I recently attended with Mr. Doubleday, there was a distinct hardness, with tenderness in the region of the right ovarium, felt in the hypogastrium and per vaginam, with frequent calls to void the bladder, and a deposit of uric acid in the urine. A cure was effected, chiefly by means of a seton.

2. *With Affection of the Head.*

2228. In this case, there is great pain of the head, frequently with great intolerance of light and of sound, throbbing of the temples, and occasionally delirium.

2229. These two affections are not unfrequently combined in the same case, at the same or at subsequent periods.

2230. In addition to these principal affections, there is also, in some instances, severe *pain* along the course of the *scalene muscles;* or of one side of the thorax, resembling *pleuritis.*

2231. The reader may consult further, § 304—.

2232. III. *The Effects of Remedies.* In this affection there is, compared with inflammation of the peritonæum, a characteristic and diagnostic susceptibility to the effects of loss of blood, denoted by early syncope on withdrawing blood in the erect position.

2233. I have only twice had an opportunity of examining the body after this disease: there was no discoverable morbid change of structure or effusion.

2234. IV. *The Treatment* is pointed out, § 311.

III. EXHAUSTION FROM LOSS OF BLOOD.

2235. I. *The History* is sufficiently marked by the previous occurrence of hæmorrhagy. It is only important to bear in mind that the symptoms of Exhaustion do not always arise from *profuse* hæmorrhagy, but occasionally, in the susceptible, from a *moderate* loss of blood; and that they do not always form immediately.

2236. II. *The Symptoms:*

1. *Of Reaction.*

2237. In this case there are excessive pain and throbbing of the *head,* palpitation of the *heart,* fulness and throbbing of the pulse, &c. with a disposition to faintishness.

2238. The affection of the head is sometimes violent in the extreme: there are severe pain, a sense of pressure, intolerance of sound, perhaps delirium.

2239. The affection of the heart consists in equally violent palpitation, perhaps with a disposition to syncope.

2. *Of Sinking.*

2240. In this case the violence of the symptoms subsides: there is frequently delirium; the breathing becomes *noisy*, like that of a person out of breath—always a fearful symptom; a crepitus is heard in the extreme branches of the bronchia, on applying the ear to the chest; the pulse loses its throb, but not its frequency. See further, § 331.

2241. III. *The Effects of Remedies.* There is a disposition to syncope, even on moving the bowels.

2242. IV. *The Morbid Anatomy.* There is, doubtless, a disposition to effusion within the head.

2243. V. *The Treatment* is sketched in § 330.

IV. MIXED CASES.

2244. It most frequently happens that Inflammation, Irritation, and Exhaustion, are mixed in the same *puerperal* case. It becomes therefore more than ever necessary to adopt any precautions in the use of blood-letting which can conduce to the safety of the patient or the diagnosis of the disease. See § 356; 358.

2245. But in this place I am particularly anxious to draw the attention of my reader to the subject of

PUERPERAL MANIA.

2246. I. *The History.* This disease generally involves—

1. *Intestinal Irritation;*
2. *Exhaustion, and perhaps*
3. *Inflammation; with*
4. *Uterine Irritation.*

2247. Its accession is usually rather sudden, perhaps after some mental excitement. It occurs at various periods after delivery; sometimes even from protracted lactation; and generally in those in whom there is an hereditary disposition to mania.

2248. II. *The Symptom* is some form of mania, and, in the case of uterine irritation, sometimes that termed nymphomania.

2249. In every case of Puerperal Mania, the state of the bowels, the condition of the system, and especially that of the uterus and its appendages, should be carefully ascertained.

2250. III. *The Treatment* involves every mode of insuring *mental* and *bodily* quiet; the diet, the state of the bowels, must be strictly attended to; the room must be darkened, visitors excluded, &c. But the principal remedy which I would here enforce, is an immediate, mild, but efficient, and sustained, *mercurial course.* Leeches may be required, applied in *small* number, to the temples, or region of the uterus. A cold spirit lotion must be kept upon the head, previously shaved.

2251. The diseases of which I must next treat, are still more formidable. They are principally *hospital* cases. The first of them is—

V. SOFTENING OF THE UTERUS.

2252. I. *The History and Symptoms.* When, after rigors, and fever, and with pain in the hypogastrium, and suppression of the lochia, there are symptoms like those of the *sinking state*, softening and destruction of the substance of the uterus may be suspected: the countenance becomes pallid, cold, and collapsed; the pulse extremely frequent and small; there is a hurried state of the respiration, anxiety, prostration, and other *typhoid* symptoms.

2253. II. *The Morbid Anatomy* consists in a softened, broken texture of the substance of the uterus, with a fœtid sanious exudation from incisions made into it.

VI. INFLAMMATION OF THE LYMPHATICS.

2254. *The general Symptoms* in this formidable disease are *typhoid*, and very similar to those just detailed. There is *usually peritonitis*, and *sometimes, pleuritis*; but there are not the secondary abscesses, &c. observed in phlebitis.

VII. PHLEBITIS.

2255. The important distinction in regard to uterine as in the other forms of Phlebitis, is between—

1. *The Adhesive, and*
2. *The Suppurative.*

2256. In the *former*, the effects are *localized*. *Uterine Phlebitis* of the adhesive character is attended by local pain and tenderness. The occurrence of *Crural Phlebitis* seems to constitute the disease formerly termed the

PHLEGMASIA DOLENS[1].

2257. This disease is distinguished by pain in the situation of the iliac and inguinal veins, with tension and swelling, afterwards pursuing their course down the thigh. The femoral vein is sometimes felt like a cord, and the swelling is white, tense, elastic, painful, and tender. Its treatment consists in local blood-letting in the course of the inflamed vein,—a strict attention to the diet, bowels, &c.

2258. The *latter* is a far more formidable and fatal disease. It is denoted by the occurrence of terrific *typhoid* symptoms, and by external suppurative inflammation of the integuments, or of the eye[2]; whilst abscesses form internally in the brain, the *lobules* of the lungs and liver, in the spleen, in the joints, in the muscular substance, &c. It is usually unattended by peritonitis.

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[1] For the elucidation of this subject, the profession is deeply indebted to Dr. D. D. Davis and to Dr. Robert Lee.

[2] See a Paper published by Mr. Higginbottom and myself upon this subject in the Trans. of the Med. Chir. Soc. vol. xiii. p. 189.

III. ON SOME TOPICAL DISEASES.

CHAPTER I.

OF DISEASES OF THE FACE.

2259. It is admitted to be impossible strictly to define and separate the objects of physic and surgery. The same disease may, at one period, belong to the former, and, in a subsequent period, to the latter department of the healing art. There is a province, which *both* physicians and surgeons should equally investigate, and which may be denominated *Medical Surgery*. To this, most of the subjects to be treated of in the present section belong.

2260. This remark is especially true in reference to certain diseases of the Face, which it is my present object to bring before my readers.

2261. These diseases consist chiefly in eruptions, ulcerations, or changes of texture, in some of the structures constituting the different parts of the face, having their origin in constitutional circumstances or local irritations. It is highly important to be intimately acquainted with the *early* appearances of these affections, some of which are inexpressibly terrible.

2262. One of these diseases, the porrigo favosa, although of a frightful aspect, is nevertheless superficial and often heals without a scar; another assumes a phagedenic character, and erodes through the part affected; a third, the lupus, begins with a tubercle which penetrates deep, and is afterwards itself destroyed by ulceration; a fourth early assumes the appearance of a cancerous ulcer.

2263. The *forehead*, the *eye-lids*, the *cheeks*, the *nose*, the *lips*, the *chin*, are the parts principally affected by these diseases, which may be thus arranged:—

I. ERYTHEMA NASI.
II. ACNE ROSACEA.
III. PORRIGO FAVOSA.
IV. LUPUS.
V. SCROFULA.
VI. CARCINOMA.
VII. SYCOSIS MENTI.
VIII. OZÆNA.
IX. PAROTID FISTULA.
X. GANGRENE.
XI. DISEASE OF THE ANTRUM.

I. ERYTHEMA NASI.

2264. There is a peculiar and distressing recurrent form of Erythema or Erysipelas of the *Nose*, dependent on a deranged state of the digestive organs: it is readily recognized, and it is cured by a persevering use of mild, warm, purgative medicines. See § 862.

II. ACNE ROSACEA.

2265. I. *The History.* This disease usually occurs after the age of forty, and is apt to be induced by long-continued excess in spirits.

2266. II. *The Symptoms.* It is denoted by extreme redness, first observed upon the end of the nose, and gradually extending over the sides of the nose and to the cheeks: these parts are rough, beset with small suppurating tubercles, and perhaps even fissured. The forehead, cheeks, and even the chin, may become affected. The nose sometimes enlarges and becomes fiery or deep red; and the tubercles, on suppurating, may ulcerate unfavourably.

2267. III. *The Treatment* consists in regulating the habits, in restoring deranged functions, &c. The liquor potassæ and the sarsaparilla have been useful.

III. PORRIGO.

2268. The Porrigo favosa, when it affects the nose and face, assumes a frightful aspect. It nevertheless frequently heals without leaving a scar. It must be distinguished from *Lupus*, the disease to be next described, and from the Ecthyma and Sycosis.

2269. This disease is characterized by an eruption of large, soft, straw-coloured pustules, without previous inflammation: these pustules are somewhat flat, with an irregular edge. When seated on the face, they become confluent, discharge a viscid humour, form scabs, and are surrounded by inflammation, and perhaps by other more distinct pustules highly characteristic of this disease.

2270. This disease requires alteratives at first, and then cinchona and chalybeates.

IV. LUPUS.

2271. This disease originates in tubercles, which enlarge, redden, and ulcerate. The ulcerations coalesce, and gradually destroy the parts upon which it is seated. These are principally the *nose*, the *lips*, the *cheeks*, the *forehead*, the *eye-lids;* but far most frequently the *nose*[1].

2272. In the last situation, the ulcer is apt to spread, destroying the apex, alæ, and septum of the nose, and portions of the cheeks, and inducing dreadful deformity.

2273. Alteratives; the liquor arsenicalis; and a regulated system of diet and exercises, have been useful; to which remedies must be added, the application of the nitrate of silver, the nitric acid, or a powder composed of *ninety-six* parts of the chloride of mercury (calomel) and *four* of the white oxide of arsenic, as recommended by Dupuytren[1], to the ulcer itself.

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[1] The various ulcers which come under the denomination of Lupus, *noli me tangere*, &c. have not yet been fully distinguished and described. Dr. Bateman is in error in thinking that M. Alibert's plate 21 represents this affection. I have noticed several forms of ulcer, about the nose especially, distinct, but not distinguished from Lupus. One of these is without redness, and erodes through the ala nasi. Another is

Syphilitic.

as ascertained by its history, the concurrence of other secondary symptoms, and its cure by mercury.

Representations of the earliest stage of these diseases would constitute a valuable addition to the diagnosis.

V. SCROFULA.

2274. This affection of the face consists, chiefly, in a tumid state of the upper lip, frequently with a deep crack and perhaps ulcer. There is also a peculiar, frightful, diseased ulceration, which passes over the nose and cheeks, which belongs to this disease. But the whole subject is in need of fresh description and representation.

VI. CARCINOMA.

2275. This disease, when it attacks the face, is usually seated upon the *lower lip;* but it may occur upon the *forehead*, the *eye-lid*, the *cheek*, &c.

2276. It begins obscurely, frequently *without scirrhus*, in a merely scaly, tubercular, or slightly thickened condition of the skin, which is succeeded by ulceration, which spreads progressively with everted edges, frightfully destroying and deforming the part in which it is seated. It is, unlike Lupus, without surrounding redness. It is attended with pain, and eventually with the pale, sallow hue of the complexion peculiar to cancer. Its progress is very various,—slow, arrested, or rapidly progressive. Excision is the only remedy.

VII. SYCOSIS.

2277. This disease is peculiar to those parts which are covered with hair: it occurs principally upon the bearded part of the upper lip and chin, and on the head. It is almost, but not quite, confined to the male sex.

Sycosis Menti.

2278. The Sycosis of the face is distinguished by slowly suppurating tubercles, the centre of each of which is occupied by a hair. The part becomes inflamed, indurated, red, tender, encrusted, in distinct or coalescent spots, matting the beard together, and preventing shaving. Its progress is very various. It is sometimes long-continued.

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[1] Leçons Orales, t iv, p. 475.

2279. Alteratives, chalybeates, cinchona, sarsaparilla, may be given in turns; and poultices, and the unguentum hydrargyri nitratis, may be applied.

VIII. OZÆNA.

2280. This term has been employed to denote various diseases within the nostrils, attended by ulcerations, fœtid discharges, caries, &c. The *extent* of the disease is ascertained by an examination: its *origin*, by an attention to the history of the case. It is chiefly connected with

1. *Syphilis; or*
2. *Cachexia.*

It is distinguished, by a careful inspection, from

Polypus.

IX. PAROTID FISTULA.

2281. This disease is readily distinguished by the flow of saliva externally through the perforated cheek, which is continual during the hours of fasting, but greatly augmented during eating. One case was cured by Mr. Higginbottom, by means of the sulphuric acid, after the nitrate of silver had failed.

X. GANGRENE.

2282. Gangrene sometimes attacks the cheek or the jaw after acute diseases, especially in the young. I have principally observed this disease in infants; but it occurs occasionally in youth and in adults.

2283. The part becomes tense and pale: an eschar is discovered occupying the internal or external part of the cheeks or gums. It frequently destroys a part of the cheek, or of the alveolæ[1]. A similar affection attacks the pudendum in female children.

XI. DISEASE OF THE ANTRUM.

2284. This disease is denoted by *fixed pain*, and an inflammatory swelling over the seat of the Antrum of Highmore. It can only be *suspected* until it is fully ascertained by the surgeon,—but it should be *suspected* when these symptoms occur.

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[1] Compare the Edinb. Med. and Surg. Journ. v. xv, p. 547, and the Trans. of the Med. Chir. Soc. vol. vi, p. 84.

CHAPTER II.

OF THE DISEASES OF THE MOUTH, THROAT, AND ŒSOPHAGUS.

2285. THE diseases of the Mouth, Throat, and Œsophagus are highly interesting both to the physician and the surgeon, and constitute, in some of their forms, an important branch of Medical Surgery. Inflammation, Scirrhus, and Syphilis present us with illustrations of this observation.

I. THE DISEASES OF THE GUMS.

I. TUMIDITY.
II. SHRINKING.
III. CIRCULAR ULCER.
IV. CANKER.

II. THE DISEASES OF THE TONGUE.

I. RANULA.
II. TUMOR, WITH SLOW SUPPURATION.
III. PSORIASIS.
IV. ULCER FROM IRRITATION.
V. SCIRRHUS. CARCINOMA.

III. THE DISEASES OF THE FAUCES.

I. INFLAMMATION.
    1. *Of the Velum.*
    2. *Of the Tonsils.*
    3. *Of the Pharynx.*
    4. *Of the Posterior Nares.*
II. ELONGATED UVULA.
III. ENLARGED TONSILS.

IV. SCARLATINA.
V. HERPES.
VI. APHTHÆ.
VII. ULCERATION.
  1. *Syphilitic.*
  2. *Pseudo-Syphilitic.*
  3. *Mercurial; &c.*

IV. THE DISEASES OF THE ŒSOPHAGUS.

I. INFLAMMATION.
II. STRICTURE.
III. SCIRRHUS. ENCEPHALOSIS.
IV. INTERNAL TUMORS, POLYPI, ETC.
V. EXTERNAL TUMORS, ANEURYSM, ETC.

I. THE DISEASES OF THE GUMS.

I. TUMIDITY.

2286. Tumidity of the Gums sometimes occurs in so marked a form as to constitute an actual disease. The gums grow up, in front, between the teeth, and, in the posterior part of the mouth, so as to cover some of the molares. This disease is usually induced by a loaded state of the colon, and is apt to be aggravated by taking cold. Purgatives, followed by mild aperients and gentle tonics, constitute the general, and excision the surgical, treatment.

II. SHRINKING.

2287. Instead of tumidity, the gums sometimes experience a degree of shrinking. The teeth are left exposed, frequently become loose, and fall out, even in the young, without the least appearance of decay. Scarification is the best remedy.

III. CIRCULAR ULCER.

2288. The gums, the inside of the lip or cheek, the point or edge of the tongue, are liable to an affection consisting of one, two, or more minute circular spots of inflammation, which gradually pass through the stages of sloughing and ulceration, with extreme tenderness. This affection arises from, and denotes, a deranged state of the stomach, and occupies a space of eight or nine days. It is promptly relieved by being touched with the nitrate of silver.

IV. CANKER.

2289. This peculiar disease occurs principally in children, and consists of a diffused, ragged ulceration, with offensive discharge, occupying the edge of the gums, and inducing looseness and decay of the teeth. The inside of the cheek is generally affected in a similar manner.

2290. This affection must be distinguished from the ptyalism of mercury, scorbutus, aphthæ, &c. and from the disease described § 2282. Its remedies are aperients, alteratives, and cinchona.

II. THE DISEASES OF THE TONGUE.

I. RANULA.

2291. This disease consists of a distended salivary duct. It must be carefully distinguished from—

1. *A Serous Cyst.*
2. *An Abscess.*
3. *A Tumor.*
4. *Calculus.*

2292. These affections have frequently a similar seat at the *under surface* of the tongue. The distinction is most readily made by means of a puncture with a couching needle.

II. TUMOR, WITH SLOW SUPPURATION.

2293. This affection, of which I have witnessed several instances, is usually situated in the *upper surface* of the tongue. It is at first a hard tumor, slightly tender on pressure; this slowly suppurates; after which it presents the appearance of a deep ulcer. It usually arises from derangement of the bowels, and is cured by emetic and purgative medicines, with the local application of the nitrate of silver.

III. PSORIASIS.

2294. I have seen the tongue covered by dry white pellicle generally, and ulcerated or even completely *perforated* in one part. Its remedies are alteratives, the liquor arsenicalis, and the application of the nitrate of silver.

IV. ULCERATION, FROM IRRITATION.

2295. The principal cause of this affection is a jagged, decayed tooth: it therefore occurs usually at the *edge* of the tongue. There are hardness, tenderness, and ulceration. It must be distinguished from—

V. SCIRRHUS, AND CARCINOMA.

2296. This disease of the tongue has no special seat; it has no obvious cause. It is denoted, first, by scirrhous hardness, then by irregular ulceration; it is not acutely tender; but it is accompanied by lancinating pain, and, in a short time, by a pale sallowness, and emaciation.

III. DISEASES OF THE THROAT.

I. INFLAMMATION.

2297. This disease is denoted by redness and tenderness, and therefore by pain on swallowing. Its seat is determined by that of the pain, and by a careful examination, and is usually—

1. *The Velum Palati.*
2. *The Tonsils.*
3. *The Pharynx.*
4. *The Posterior Nares.*

In one form of this disease, there are great laryngeal irritation and violent *cough*, which are removed by passing the nitrate of silver along the border of the velum.

II. ELONGATED UVULA.

2298. By repeated inflammation, the uvula is sometimes left elongated; and, descending upon the posterior part of the tongue, it frequently excites a troublesome *cough*, which is cured by removing a portion of the elongated organ.

III. ENLARGED TONSILS.

2299. In other cases, inflammation leaves an enlargement of the tonsils; the deglutition and the speech are somewhat affected. The nature and extent of the disease are determined on examination. A portion of the tonsils must be removed by scissors or ligature.

IV. DYSPEPTIC SORE THROAT.

2300. This form of Sore Throat occurs in the acute or protracted dyspepsia. It is continued, or removed, with the original disease.

V. SCARLATINA.

2301. This affection is frequently *confined* to the throat. It is distinguished by its peculiar scarlet hue, and by occurring during the prevalence of scarlatina in those exposed to its contagion.

VI. HERPES.

2302. With, or without, a cluster of vesicles, or Herpes, on the lip, there is, occasionally, a diffused Herpes of the velum and palate, readily detected and discriminated on a careful examination.

VII. APHTHÆ.

2303. The velum and palate are frequently beset, with the tongue, the inside of the lips and cheeks, and perhaps the pharynx and œsophagus, with diffused inflammation, —partly denuded,—and partly covered with ragged portions of lymph, or Aphthæ.

VIII. ULCERATION.

2304. Ulceration of the Throat is seen in the Tonsils, the Uvula and velum, and the Pharynx. It is—

1. *Syphilitic.*
2. *Pseudo-Syphilitic.*
3. *Mercurial; &c.*

2305. The profession is still greatly in need of *representations* of these morbid affections of the Throat.

IV. DISEASES OF THE ŒSOPHAGUS.

I. INFLAMMATION.

2306. This disease of the œsophagus is rare, and can only be indicated by the pain and difficulty in swallowing. It is the source of thickening and of

II. STRICTURE.

2307. Stricture, in its simple form, usually occupies the superior portions of the œsophagus. The *seat* of the disease may be conjectured by the quantity of fluid which may be made to disappear before it is regurgitated, being lower as this is greater: it is ascertained by the bougie, by means of which, with purgatives and leeches, it is cured.

III. SCIRRHUS, ETC.

2308. Scirrhus is, more frequently than simple stricture, found in the lower parts of the œsophagus, or at the cardia itself. It is distinguished by the constitutional affection, by watching the efforts to swallow, and by the bougie. I have seen a small basinful of cocoa swallowed, retained for a time in the œsophagus, and then rejected by an effort precisely like that of vomiting.

IV. INTERNAL TUMORS, ETC.

V. EXTERNAL TUMORS, ETC.

2309. The former of these scarcely admit of diagnosis from stricture or scirrhus ; the latter are to be discriminated only by a careful examination.

CHAPTER III.

OF CUTANEOUS DISEASES.

2310. I HAVE reserved for this Chapter such of the Cutaneous Diseases as do not possess the degree of importance of the eruptive fevers, and yet require great care and attention for their diagnosis and treatment. My account of them will be as short as possible to be useful.

2311. Cutaneous Diseases gradually pass from the acute into the chronic forms; and even the same cutaneous disease frequently assumes, in its course, both these characters successively. The arrangement of these morbid affections, which is at once most natural and best adapted to set forth their diagnosis, is that which begins with their acute forms and gradually descends to the chronic. Every artificial arrangement, not excepting the elegant classification of Willan, must dissociate similar and associate dissimilar diseases: for example, ecthyma and rupia, although probably different forms of the same disease, are found arranged in the distinct orders of Pustulæ and Vesiculæ. Many other equally injurious distributions of cutaneous diseases in Dr. Willan's classification might be pointed out.

2312. In pourtraying the diagnosis of Cutaneous Diseases, I shall be anxious, as usual, to simplify the subject, and not to admit of subdivisions which are mere refinements, and not marked by practical utility.

I. ROSEOLA.
II. SCARLET RASH.
III. URTICARIA.
IV. ERYTHEMA.
V. LICHEN.
VI. PRURIGO.
VII. MILIARIA.
VIII. HERPES.
IX. ECZEMA.
X. IMPETIGO.

XI. SCABIES.
XII. PORRIGO.
XIII. SYCOSIS.
XIV. ACNE.
XV. ECTHYMA.
XVI. RUPIA.
XVII. PEMPHIGUS.
XVIII. POMPHOLYX.
XIX. LEPRA.
XX. PSORIASIS.
XXI. PITRIASIS.
XXII. ICTHYOSIS.

I. ROSEOLA.

2313. I. *The History.* The Roseola is either induced by inclemencies of the atmosphere, or occurs *symptomatically* in other diseases, and principally—

1. *In the Synochus and Typhus.*
2. *In Variola and Vaccinia.*
3. *In Gout and Rheumatism.*
4. *With Miliaria.*

2314. II. *The Symptoms* consist in a rash, generally figured, at first red, afterwards more or less of a rose-colour, usually beginning at the extremities and terminating on the face and trunk of the body, of several days' duration, and apt to be recurrent.

2315. It is important to notice this affection, chiefly with the view of distinguishing it from Scarlatina, Rubeola, Erythema, Urticaria, &c. The forms of Roseola enumerated by Dr. Willan, are—

1. *Roseola æstiva.*
2. *Roseola autumnalis.*
3. *Roseola annulata.*
4. *Roseola infantilis.*
5. *Roseola variolosa.*
6. *Roseola vaccinia.*
7. *Roseola miliaris.*

The only forms of this disease requiring notice in this place are—

1. *Roseola Æstiva.*

2316. I. *The History.* This form of Roseola occurs chiefly in females of irritable constitutions, from exposure to heats and chills in summer; it is sometimes associated with the local complaints of this season.

2317. II. *The Symptoms.* It is preceded by fever and accompanied by itching and tingling. It is distributed in patches of various figure, not crescentiform, larger, more irregular, and paler than rubeola; at first red, it soon assumes its peculiar roseate hue. The fauces are affected with a similar efflorescence. The rash continues vivid on the second day, but declines on the third, and has disappeared on the fifth. It is sometimes partial and longer continued, or it recedes and returns.

2. *Roseola Annulata.*

2318. This form of Roseola appears on every part of the body, in rose-coloured rings, with central areas of the natural colour, which gradually dilate, from one or two lines to half an inch in diameter. This affection is either attended with fever and short in its duration, or it is without fever and more protracted.

2319. Roseola is distinguished from Rubeola by the absence of all evidence of infection, of catarrhal symptoms, and of the characteristic appearance of the rash first upon the face, and then on the other parts of the body, with its peculiar crescentic forms.

2320. III. *The Treatment* of Roseola consists in maintaining a free state of the bowels, in imposing a diet of mild diluents, and in avoiding all exposure to cold or damp, fatigue, &c. Mild mercurials and antimonials, and the carbonate of potass, are also useful.

II. SCARLET RASH.

2321. A cutaneous disease, of which I believe I have seen several instances, *resembling Scarlatina* in its appearance, is described by Dr. Maton[1]. It is highly interesting in a diagnostic point of view.

2322. I. *The History.* It appears to be contagious. But the contagion is latent for a longer period than Scarlatina, in the proportion of three weeks to one.

2323. II. *The Symptoms.* There are rigor, and, shortly afterwards, the appearance of the rash; this is distinguished from scarlatina by much tingling, by the absence of enlarged papillæ of the tongue, and of the degree of sore throat observed in Scarlatina, and of the desquamation of the cuticle which follows it[1].

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[1] Trans. of the Royal Col. of Phys. vol. v, p. 143.

2324. III. *The Treatment* is that pointed out § 2320.

III. URTICARIA.

2325. I. *The History.* Urticaria is generally excited by some improper article of food, or other source of indigestion. It assumes various forms, which are thus enumerated by Dr. Willan :—

1. *Urticaria febrilis.*	4. *Urticaria conferta.*
2. *Urticaria evanida.*	5. *Urticaria subcutanea.*
3. *Urticaria perstans.*	5. *Urticaria tuberosa.*

The following description will be sufficient for the diagnosis.

2326. II. *The Symptoms.* Urticaria consists of elevations of the skin, of greater or less circumference, of various forms, flat at the upper surface, and generally denominated *wheals.* There is no tenderness or disposition to suppuration ; but there is excessive itching or tingling.

2327. In the *febrile* Urticaria, there is a diffused efflorescence, as well as numerous wheals. The case must be distinguished from scarlatina; but the diagnosis only requires the most ordinary caution.

2328. The other forms of Urticaria are sufficiently expressed by their several *epithets*[2], and really present little difficulty in the diagnosis.

2329. III. *The Treatment* is that pointed out § 2320, sometimes preceded by a gentle emetic dose of ipecacuanha.

IV. ERYTHEMA.

2330. I. *The History.* The Erythema is generally *symptomatic.*

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[1] This rash bears the same similarity to Scarlatina which Roseola does to Rubeola ; the diagnosis is of great importance in determining the question of the possibility of the recurrence of Scarlatina and Rubeola in the same person.

[2] I have carefully preserved the epithets of Dr. Willan, on account of their utility in the diagnosis of their different forms, although they are frequently but too minute as grounds of subdivision and arrangement.

2231. II. *The Symptoms.* This affection consists of diffused patches of efflorescence. It is frequently seen upon the face, neck, chest, and arms; and, in conjunction with œdema, upon the legs. In the last situation, it may terminate in gangrenous ulceration. Dr. Willan enumerates the following varieties of Erythema:—

1. *The Erythema fugax.*
2. *The Erythema læve.*
3. *The Erythema marginatum.*
4. *The Erythema papulatum.*
5. *The Erythema tuberculatum.*
6. *The Erythema nodosum.*
7. *The Erythema intertrigo.*

2332. None of these forms require particular notice, except the *sixth*. The Erythema nodosum is common in chlorosis and the similar affections of younger patients. It occurs in the form of red nodes under the skin, along the anterior part of the leg, which are slightly tender, but do not suppurate.

2333. There is another form of Erythema not noticed by Dr. Willan. See § 2264.

V. LICHEN.

2334. I. *The History.* Lichen generally arises from internal disorder. It occurs, according to Dr. Willan, under the forms:—

1. *Lichen simplex.*
2. *Lichen pilaris.*
3. *Lichen circumscriptus.*
4. *Lichen agrius.*
5. *Lichen lividus.*
6. *Lichen tropicus.*
7. *Lichen urticatus.*

The principal of these forms are the

1. *Lichen simplex; and*
2. *Lichen agrius.*

The Lichen pilaris is only peculiar from occupying the roots of the hairs; the Lichen circumscriptus, from the *clustered* arrangement of the papulæ; the Lichen urticatus from its combining the character of Lichen and Urticaria; and the

Lichen lividus from combining those of Lichen and of Purpura.

2335. II. *The Symptoms*:—

1. *Lichen simplex.*

This affection consists of red, inflamed papulæ, first appearing on the face and arms, and then on the trunk and limbs, preceded by fever, and attended by tingling, especially in the night. In about a week, the redness fades and the papulæ decline into scurf, most and longest seen at the flexures of the joints, and especially of the arm. It may pass into Psoriasis.

2. *Lichen agrius.*

2336. This severer form of Lichen is ushered in by fever. The papulæ occur in large patches, of a high red colour, with diffused inflammation: there are much itching, heat, and tingling, which are exasperated by heat, or any irritation, and after dinner. Small vesicles, filled with a straw-coloured fluid, are occasionally intermixed with the papulæ. If this affection be long-continued, the skin becomes harsh, thickened, and cracked, and there is exquisite pain if it be rubbed. After repeated attacks, it may assume the character of Impetigo.

2337. *The Treatment* consists in mild mercurials and antimonials, followed by quinine, chalybeates, the liquor arsenicalis, or the dilute sulphuric acid. Gruel, applied by means of a camel's hair pencil, relieves the Lichen agrius. A moderately warm bath is also useful.

IV. PRURIGO.

2338. This disease is denoted by severe itching, increased by exposure to heat, affecting either the whole surface of the skin, or a part only; in some instances, without any apparent eruption; in others, accompanied by an eruption of papulæ, generally larger than those of lichen, and nearly of the same colour with the adjoining cuticle.

2339. Dr. Willan describes three forms of Prurigo:—

1. *Prurigo mitis.*
2. *Prurigo formicans.*
3. *Prurigo senilis.*

2340. The *first* of these occurs in the young. The *second* is distinguished by its obstinacy and severity and its peculiar sensations of itching, stinging, creeping, &c. If the second form of Prurigo be obstinate, the *third* is inveterate, and often destroys the comfort of the patient, by its incessant itching and stinging, for the rest of life.

2341. *The Treatment* consists in mercurials, antimonials, and aperients; the Harrowgate waters, and warm baths; and various local applications, as ablutions, lotions, &c.

VII. MILIARIA.

2342. I. *The History.* The Miliaria is always *symptomatic.* It may occur in any febrile disorder; but it is chiefly observed when the skin is excited to profuse perspiration. I have seen it in typhus, rheumatism, &c. and it was formerly a frequent attendant on the puerperal state.

2343. II. *The Symptoms.* It consists of an eruption of minute, round vesicles, of the size of millet-seeds, transparent at first, afterwards very slightly opaque. This eruption occurs upon every part of the surface, but chiefly on the throat, neck, and face, diffused, or in patches.

2344. The Miliaria can scarcely be confounded with any other cutaneous affection.

VIII. HERPES.

2345. I. *The History.* Herpes is generally the result of exposure to cold under constitutional derangement. It observes a regular course of eruption, scabbing, and desiccation, which occupies nine or ten days.

2346. II. *The Symptoms.* This affection consists of *clusters* of vesicles, which vary much in form, seat, and extent, giving origin to the following varieties of the disease:—

1. *Herpes labialis.*
2. *Herpes zoster.*
3. *Herpes phlyctænodes.*
4. *Herpes circinatus.*
5. *Herpes iris.*
6. *Herpes præputialis.*

1. *Herpes labialis.*

2347. This form of Herpes has been already described, § 2301.

2. *Herpes zoster.*

2348. This form of the disease consists of successive clusters of vesicles, with surrounding redness, spreading directly or obliquely across the waist or thorax, in the manner of a sash or sword-belt. Its vulgar designation is *Shingles.* *See* § 1596.

3. *Herpes phlyctænodes.*

2349. This kind of Herpes consists of similar successive clusters of vesicles, which observe a similar course, but less regular form. It may occur in any part of the body. It is denominated *Nirles* by the vulgar. *See* § 1596.

4. *Herpes circinatus.*

2350. This affection is more chronic than the preceding forms of Herpes, and is popularly designated *Ringworm.* Its *vesicular* character distinguishes it, at once, from the *pustular* Porrigo.

5. *Herpes præputialis.*

2351. This affection is also distinguished by its *vesicular* character.

IX. ECZEMA.

2352. The Eczema depends upon the application of external or internal irritants. Unlike Herpes, it is extremely irregular in its course and decline. Dr. Willan describes three forms of it:—

1. *Eczema solare.*
2. *Eczema impetiginodes.*
3. *Eczema rubrum.*

The *first* of these arises in a part which has been exposed to the direct rays of the sun, chiefly the face and neck. The *second depends* upon the application of a local irritation, and appears principally on the hands: it constitutes what is designated in one instance the *Grocer's*, in another the *Bricklayer's*, itch, according as the exciting cause is sugar or lime. But the most important variety of Eczema is the

Eczema rubrum.

2353. I. *The History.* This disease is generally, but not universally, excited by the external or internal use of *mercury.* Its seat, extent, and duration are extremely variable.

2354. II. *The Symptoms.* The first appearance of the Eczema is a diffused redness, rather rough to the touch, and distinctly, though minutely, vesicular on a careful examination. It is attended by tingling and tumefaction. The vesicles contain a fluid, transparent at first, and, in a few days, slightly opaque. It is most frequently seen on the upper part and flexures of the thighs; but it is often diffused extensively over the surface. The vesicles burst, at length, pour forth an acrid ichor, and the parts are painfully excoriated and fissured.

2355. The general health is frequently little affected.

2356. III. *The Treatment* consists in a variety of external applications, baths, &c.

X. IMPETIGO.

2357. The transition is natural from Eczema to Impetigo, although these diseases are distributed in distant parts of Dr. Willan's arrangement. That author has divided Impetigo into five forms:—

1. *Impetigo figurata.*
2. *Impetigo sparsa.*
3. *Impetigo erysipelatodes.*
4. *Impetigo scabida.*
5. *Impetigo rodens.*

2358. II. *The Symptoms.* Impetigo consists in the eruption of pustules, which are not very prominent, and which in a few days break and discharge their fluid, the surface becoming red, excoriated, and shining, and discharging an ichorous fluid; there are also great heat, itching, and smarting. The discharge concretes into thin scabs.

2359. The *first* variety of Impetigo assumes the form of *Ringworm;* the *second* is more diffused; the *third* appears upon the surface of a part affected with erysipelatous inflammation; the *fourth* is long-continued, the part being "encased in a thick, yellowish, scaly crust, not unlike the bark of a tree;" the *fifth* variety is said to be allied to cancer[1].

2360. III. *The Treatment.* Aperients, antacids, tonics, &c. must be conjoined with various applications, as gruel, lotions with alcohol, &c. an ointment with one-eighth part of the liquor plumbi superacetatis, &c.

XI. SCABIES.

2361. I. *The History.* Scabies is decidedly contagious.

2362. II. *The Symptoms.* It consists of an eruption of papulæ, vesicles, or pustules, singly, or intermixed, chiefly seated betwixt the fingers and at the bend of the wrists, and of the other joints, but also on every part of the body, except the face, terminating in scabs, and accompanied by intolerable itching.

2363. Dr. Willan divided this disease into four distinct forms:—

1. *Scabies papuliformis.*
2. *Scabies lymphatica.*
3. *Scabies purulenta.*
4. *Scabies cachectica.*

2364. III. *The Effects of Remedies.* Scabies generally, real Scabies perhaps always, yields to the due application of the unguentum sulphuris.

XII. PORRIGO.

2365. I. *The History.* This disease, like scabies, is contagious.

2366. II. *The Symptoms.* The Porrigo consists of the eruption of straw-coloured pustules, sometimes circumscribed, sometimes diffused, generally but not always confined to the head; the pustles break and give issue to a fluid which concretes into yellowish or brownish, thin or thick crusts or scabs.

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[1] It will be obvious, from this brief description, that Eczema and Impetigo are nearly allied. The vesicular and pustular eruptions are sometimes *combined* even; and the *Bricklayer's* or the *Grocer's* itch is sometimes an Eczema, sometimes an Impetigo. Impetigo seems also allied to Porrigo. The subject is in need of simplification.

2367. Dr. Willan describes six varieties of Porrigo:—

1. *Porrigo larvalis.*
2. *Porrigo furfurans.*
3. *Porrigo lupinosa.*
4. *Porrigo scutulata.*
5. *Porrigo decalvans.*
6. *Porrigo favosa.*

2368. The *first* is peculiar to infants.

2369. The *second* consists in pustules which successively issue in *thin* scabs, like scurf, the hair becoming thin, and weak, and lighter in colour.

2370. The *third* consists of pustules which terminate in *small* scabs of the size and appearance of lupine-seeds, and ultimately of the size of a sixpence.

2371. The *fourth*, of pustules leading to thin scabs, which become thick if neglected, assuming the form of *Ringworm*, and ultimately coalescing so as to affect the whole scalp.

2372. The *fifth* variety, or the Porrigo decalvans, is obscurely, if at all, pustular, and consists in bald patches of the scalp.

2373. The Porrigo favosa occurs in all parts of the body, sometimes on the scalp, sometimes on the face, trunk, or extremities only, but chiefly on the head and behind the ears, with swelling of the cervical glands.

2374. Innumerable *Remedies*, internal and external, have been recommended for Porrigo. Indeed, it is plain that, under this designation, many totally different diseases are classed by Willan and Bateman. A just distinction is first required, and then a careful inquiry into the special efficacy of remedies.

2375. In general, it may be observed that an attention must be paid to restore the health and tone of the system; and applications of an emollient and stimulant character must then be made in turns. After cataplasms and simple ointments, the unguentum hydrargyri nitratis, the unguentum picis, the unguentum sulphuris, singly and mixed; the liquor potassæ; the nitras argenti, have been variously prescribed.

XIII. SYCOSIS.

2376. This cutaneous disease, when it affects the head, must be distinguished from Porrigo. The distinction is founded on its tubercular, slowly suppurating character. Its tubercles are inflamed, fleshy, and of a darkish red; they are apt to coalesce; and they pour out a sanious matter, which concretes, and mats the hair together. It is distinguished by its seat into the

1. *Sycosis menti.* 2. *Sycosis capillitii.*

1377. The *former*, affecting the bearded part of the lip and chin, has been noticed § 2277. The *latter* is principally seated upon the margin of the hairy scalp: the tubercles rise in circular clusters, are softer and more acuminated than those of the Sycosis menti, slowly suppurate, coalesce, and induce an elevated, unequal, ulcerated surface, which often appears granulated, resembling the cut surface of a fig; whence its name.

2378. *The Treatment* is the same as that described, § 2375.

XIV. ACNE.

2379. It seems quite unnecessary to enter into any minute description of that eruption of slowly or partially suppurating tubercles, which chiefly beset the face and the skin upon the shoulders of young persons. It has been described under four forms by Dr. Willan, the designations of which sufficiently express the varietes of its appearance:

1. *Acne simplex.* 3. *Acne indurata.*
2. *Acne punctata.* 4. *Acne rosacea.*

The last of these has been already noticed § 2265.

2380. In addition to the treatment, § 2378, I may recommend the trial of an unchemical mixture of sulphur and brandy, shaken together and applied to the spots of acne.

XV. ECTHYMA.

2381. I. *The History.* The Ecthyma generally follows some severe indisposition, as fever, scarlatina, rubeola, variola, dyspepsia acuta, or the effects of anxiety, spirits, &c. It constitutes certain forms of venereal eruptions; and it is frequently the effect of *Cachexia.*

2382. II. *The Symptoms.* This disease consists of distinct, scattered pustules, situated upon hard, elevated, and inflamed bases, and terminating in thick, hard, greenish, or dark-coloured scabs.

2383. Dr. Willan describes four varieties of Ecthyma:—

1. *Ecthyma vulgare.*	3. *Ecthyma luridum.*
2. *Ecthyma infantile.*	4. *Ecthyma cachecticum.*

2384. The *first* variety consists of a partial eruption of small, hard pustules, on the neck, shoulders, or extremities, which is completed in about three days. They enlarge and inflame, form pus, and then scabs. These eventually dry, fall off, and leave no mark behind. They are chiefly seen in young persons whose health has been impaired.

2385. The pustules of the Ecthyma luridum are larger, more diffused, more repeated, and are fixed upon a hard, elevated base of a peculiar dark red colour. They appear upon every part of the body, but least frequently on the face. This form of Ecthyma is principally seen in old persons of broken constitutions. A *symptomatic* variety also occurs during the cachexia which succeeds to scarlatina, &c.

2386. The Ecthyma cachecticum occurs, as its name imports, during various forms of Cachexia, and especially that which follows certain venereal taints. My reader is referred to § 2199.

2387. III. *The Treatment* is entirely constitutional. The secretions and the tone of the system must be restored, and sarsaparilla administered; warm-baths, sulphurous baths, &c. must be added.

XVI.. RUPIA.

2388. Rupia is described by Dr. Bateman as consisting of an "eruption of flat, distinct vesicles, with the base slightly inflamed, containing a sanious fluid, the scabs accumulating, sometimes in a conical form, easily rubbed off, and soon reproduced." The same author enumerates three varieties of the disease —

1. *Rupia simplex.*
2. *Rupia prominens.*
3. *Rupia escharotica*[1].

2389. The principles of treament are the same in Rupia as in Ecthyma.

XVII. PEMPHIGUS.

2390. This disease is described by Dr. Bateman as an eruption of transparent vesicles, about the size of a filbert, *with* a red, inflamed edge, but without surrounding blush or tumefaction, containing a pellucid fluid, and disposed to ulcerate on breaking.

XVIII. POMPHOLYX.

2391. This affection consists of an eruption of blebs *without* surrounding inflammation, and without fever, which break and heal without scab or crust. It appears under the three following forms:—

1. *Pompholyx benignus.*
2. *Pompholyx diutinus.*
3. *Pompholyx solitarius.*

2392. The *first* consists of transparent blebs, which appear in succession, burst, and soon heal. They appear chiefly in boys in hot weather, on the face, neck, and limbs.

2393. The *second* occurs in debilitated or aged persons, in the form of successive blebs, which augment from the size of a pea to that of a walnut, and perhaps burst and lead to excoriation. This disease is sometimes associated with dropsy or purpura.

2394. The *third* form of Pompholyx requires no distinct notice.

2395. *The Treatment* is the same as in Ecthyma, Rupia, &c.

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[1] This disease was not noticed by Dr. Willan. Dr. Bateman confesses that, for all practical purposes, it might be included with the Ecthyma, appearing under similar circumstances with the Ecthyma luridum and the Ecthyma cachecticum. It is altogether a useless refinement.

XIX. LEPRA.

2396. This disease consists of circular patches of smooth, laminated scales, of different sizes, inflamed at their borders, and depressed in their centres.

2397. There are three varieties of Lepra:—

1. *Lepra vulgaris.*
2. *Lepra alphoides.*
3. *Lepra nigricans.*

2398. The *first* and *second* do not deserve a distinct notice. The Lepra is generally seen to occupy the skin over the *olecranon* and *patella.*

2399. The *third* variety is attended by thinner scales; and, when these are removed, the part is frequently tender and apt to bleed. It is frequently associated with cachexia.

2400. *The Treatment* in Lepra consists in restoring the healthy condition of the system, especially the secretions and the skin; the liquor arsenicalis, the decoctum dulcamaræ, sarsaparilla, &c. have also been prescribed.

XX. PSORIASIS.

2401. Psoriasis differs from the Lepra chiefly in the irregular form and in the diffusion of the scaly patches, and in the absence of its inflamed borders, depressed centres, and regular oval or circular forms. The subjacent surface is also more tender, more easily denuded, and more prone to become affected by fissures. Psoriasis has been divided into the following varieties:—

1. *Psoriasis guttata.*
2. *Psoriasis diffusa.*
3. *Psoriasis gyrata.*
4. *Psoriasis inveterata.*
5. *Psoriasis localis.*

2402. These varieties, except the last, depend on the difference of *form* and *duration* of the disease. The Psoriasis *localis affects*—1, the under lip; 2, the wrists and fore-arm in *washerwomen;* 3, the palm of the hand, the eyelids; 4, the back of the hand in *bakers;* 5, the prepuce; 6, the scrotum.

2403. The principles of treatment are the same as in Lepra.

XXI. PITYRIASIS.

2404. This affection consists of irregular patches of thin, bran-like scales, which frequently exfoliate and recur, but never form crusts, or are accompanied with excoriations.

2405. Four varieties of Pityriasis have been described:—

1. *Pityriasis capitis.*
2. *Pityriasis rubra.*
3. *Pityriasis versicolor.*
4. *Pityriasis nigra.*

2406. The *first* of these is the dandriff of infants.

2407. The *second* occurs in advanced life.

2408. The *third* is denoted by the variegated appearance of the cuticle.

2409. The *fourth* is seen in children born in India.

2410. *The Treatment.* Attention to the general health, and frequent ablutions with pure water, are the only remedies required. I have frequently seen Pityriasis excited by flannel; this must therefore be avoided.

XXII. ICTHYOSIS.

2411. This disease consists in an indurated, horny condition of the skin. It is divided into two kinds:—

1. *Icthyosis simplex.*
2. *Icthyosis cornea.*

CHAPTER IV.

OF SOME DISEASES SUBJACENT TO THE SKIN.

2412. I PROPOSE, in the present chapter, to sketch the diagnosis of those diseases which are seated deeper than the skin. They will present new instances of affections belonging to the province of medical surgery rather than that of physic.

2413. These diseases occur in the course of the limbs, in the neck, in the groin, and in the lumbar and iliac regions. The diseases of each of these parts form interesting subjects for diagnosis, as the reader will perceive on casting his eye over the subjoined arrangement.

I. OF THE LIMBS.

I. PHLEBITIS.
II. INFLAMMATION OF THE ABSORBENTS.

II. OF THE NECK.

I. INFLAMMATION OF THE LYMPHATIC GLANDS.
II. CYNANCHE PAROTIDEA.
III. BRONCHOCELE.
IV. TUMORS.
V. ANEURYSM.

III. OF THE GROIN.

I. INFLAMED GLANDS.
II. HERNIA.
III. THE POINTING OF LUMBAR ABSCESS.
IV. TUMORS.
V. ANEURYSM.

IV. OF THE LUMBAR AND ILIAC REGIONS.

I. DISEASE OF THE SPINE.
II. ANEURYSM OF THE AORTA.
III. RHEUMATISM; LUMBAGO.
IV. LUMBAR ABSCESS.
V. DISEASE OF THE KIDNEY.
VI. DISEASE OF THE HIP-JOINT.

I. DISEASES OF THE LIMBS.

I. PHLEBITIS.

2414. I. *The History.* Inflammation of the vein frequently occurs from an accident or surgical operation: it is apt to follow venæsection, the ligature of a vein, &c. and I have known one instance occasioned by the bite of a horse on the finger.

2415. II. *The Symptoms.* Phlebitis is distinguished by a hard, cord-like, tender line, pursuing the course of a vein or veins, from an incision or wound. It is—

Suppurative, and Diffused;

and attended by *typhoid fever*, and abscesses; or

Suppurative, and Adhesive,

and accompanied by distinct abscesses in the course of the inflamed vein, with protracted fever. § 2255.

II. INFLAMMATION OF THE LYMPHATICS.

2416. I. *The History.* This disease usually arises from a wound or ulcer.

2417. II. *The Symptoms* consist in a flat line of redness and tenderness, pursuing its course from this wound or ulcer along the lymphatic vessels, and frequently attaining the lymphatic glands,—in the neck, in the axilla, or in the groin, —when the scalp, the hand or arm, the leg or foot, or the penis, is severally affected. The redness and tenderness may subside; or numerous successive abscesses may form in the course of the lymphatic vessels or glands.

2418. III. *The Treatment* consists in purgative and saline medicines, and the application of the nitrate of silver.

II. DISEASES OF THE NECK.

I. INFLAMMATION OF THE LYMPHATIC GLANDS.

2419. I. *The History.* This affection is generally slow in its progress, and allied to struma or connected with general disorder. It is also a frequent complication of porrigo.

2420. II. *The Symptoms.* The tumor obviously consists of a single lymphatic gland; or of a chain or cluster of glands; it is, of course, seated in the situation of these glands, and thus distinguished from the disease to be next mentioned; it frequently passes into slow suppuration.

2421. III. *The Treatment* consists of mild aperients and tonics; leeches, blisters, &c.

II. CYNANCHE PAROTIDEA.

2422. I. *The History.* The Cynanche Parotidea, or mumps, is a contagious disease, and may generally be traced to exposure to patients similarly affected.

2423. II. *The Symptoms.* It is distinguished by occupying the position of one, or more, of the parotid or submaxillary glands. It is soft, puffy, slightly tender, and not disposed to suppurate. It is subject to metastasis, to the *testis* in the male, and to the *mamma* in the female subject. It is attended by febrile symptoms.

2424. III. *The Treatment* is simply and purely antiphlogistic.

III. BRONCHOCELE.

2425. I. *The History.* This singular affection is endemic in hilly countries; in Switzerland it is termed the goître, and is apt to be associated with cretinism.

2426. II. *The Symptoms.* Bronchocele is an enlargement of the thyroid gland; its situation will, therefore, be well known to the student of anatomy; it is frequently unequally developed on the two sides of the thyroid cartilage; it is soft and free from tenderness; and is moved upwards in deglutition.

2427. By degrees it may increase in magnitude so as to impede the respiration ; and it may become extremely hard, and even ossified.

2428. III. *The Effect of Remedies.* Early in the disease, the iodine seems to be almost specific.

IV. TUMORS.

2429. A tumor situated in the neck can only be identified by contrasting its form, origin, and progress, with those of the affections just described, and by comparing them with those of the various kinds of morbid growths. In this manner, too, is such a tumor to be distinguished from

V. ANEURYSM,

which is further distinguished by its peculiar pulsation, and the impulse felt and the sound heard under the ear or stethoscope.

III. DISEASES OF THE GROIN.

I. INFLAMED GLANDS.

2430. This disease is distinguished by its tenderness, and by presenting to the finger the sensation of several distinct glands forming the general tumor. There are frequently redness of the skin, and an obvious disposition to suppurate.

II. INGUINAL HERNIA.

2431. This disease, when free from strangulation, consists of an individual tumor, augmented on coughing, reducible by pressure in the recumbent posture, and unattended by tenderness, or pain, or other symptoms.

2432. When strangulated, it is attended by its peculiar symptoms of sickness, vomiting, and intestinal obstruction and pain; and the local tumor, when examined, is usually found to be tender under pressure.

III. LUMBAR ABSCESS,

2433. When it points in the groin, is attended by phenomena precisely similar to those of hernia when free from strangulation. These two cases are distinguished by *the history*, lumbar abscess being preceded by its peculiar symptoms. They are also distinguished by the state of the general health, which, in lumbar abscess, is greatly impaired. The stethoscope would also probably assist the diagnosis. § 2438.

IV. TUMORS, and

V. ANEURYSM,

2434. Are to be distinguished by their appropriate course and symptoms, which need not be repeated in this place.

IV. DISEASES OF THE LUMBAR AND ILIAC REGIONS.

I. DISEASE OF THE SPINE.

2435. This disease, which is usually of the most insidious character, is detected by careful *examination*. Pain and tenderness in the course of the spine on the application of pressure or percussion, followed by spasmodic or paralytic symptoms, are the diagnostic marks of this terrific disease. The general health also fails, and there are debility and emaciation. In the case of caries, redness and tumor and augmented pain and tenderness supervene.

II. ANEURYSM OF THE AORTA.

2436. In cases of pain and tenderness in the region of the spine, the ear or the stethoscope will occasionally detect the pulsation of an aortic aneurysm. In all such cases, this mode of examination should, therefore, be adopted.

III. RHEUMATISM; LUMBAGO.

2437. This affection is usually sudden in its attack, attended with greatly aggravated pain on throwing the lumbar muscles into action, and frequently with pain in the joints or limbs, and unattended by the symptoms peculiar to the other diseases of this section.

IV. LUMBAR OR ILIAC ABSCESS.

2438. I. *The History.* This affection may sometimes be traced to a blow or strain, or to exposure to damp and cold. It is exceedingly insidious, and frequently undetected until it begins to point externally.

2439. II. *The Symptoms* are obscure pain of the back, with little tenderness, but with a peculiar lameness of one leg, the thigh being flexed upon the abdomen or rotated inwards with pain. There is some degree of hectic, debility and emaciation; in the course of time, a soft tumor appears in the groin, near the anus, or in the back, &c. which becomes tense on coughing, and fluctuates under the finger. This disease is frequently complicated with—

1. *Caries of the Spine, or*
2. *Tuberculous Disease.*

It is necessary to distinguish it from

V. DISEASE OF THE KIDNEY;

2440. The diagnostic marks of which are given, § 2012—, and from

VI. DISEASE OF THE HIP;

2441. The diagnosis of which is to be found in works professedly of surgery.

CHAPTER V.

OF THE DISEASES OF THE GENITAL ORGANS.

2442. Few diseases require such care in the diagnosis as those of the Genital Organs. In the subsequent paragraphs, I shall, as usual, attempt a brief, practical view of this subject.

I. IN THE MALE SEX.

I. OF THE PENIS.

I. GONORRHŒA.
II. EXCORIATION.
III. SUPERFICIAL ULCER.
IV. PHAGEDENIC ULCER.
V. SLOUGHING ULCER.
VI. SYPHILITIC ULCER.
VII. HERPES PRÆPUTIALIS.
VIII. SCIRRHUS—CARCINOMA.

II. OF THE TESTIS.

I. INFLAMMATION.
    1. *Of the Epididymis.*
    2. *Of the Body of the Testis.*
        1. *Enlargement.*
        2. *Suppuration.*
        3. *Sloughing.*
II. TUBERCLES.
III. FIBROUS TUMOR.
IV. ENCEPHALOSIS.

- V. SCIRRHUS.
- VI. HYDROCELE.
- VII. VARICOCELE.
- VIII. HERNIA.

II. IN THE FEMALE SEX.

I. OF THE PUDENDA.

- I. INFLAMMATION.
  - 1. *Enlargement.*
  - 2. *Abscess.*
- II. PRURIGO.
- III. VASCULAR TUMOR OF THE MEATUS.
- IV. VARICOCELE OF THE URETHRA.
- V. AFFECTIONS OF THE ANUS.

II. OF THE VAGINA.

- I. INFLAMMATION.
- II. TUMORS.

I. IN THE MALE SEX.

II. DISEASES OF THE PENIS.

I. GONORRHŒA.

2443. I. *The History.* This disease usually takes place six or eight or more days after an impure coitus.

2444. II. *The Symptoms* are a white, opaque, mucous discharge from the urethra, with partial abrasions, with ardor urinæ, and frequently with one or other of the following *Complications*:—

1. *Chordee,*
2. *Inflammation of the Testis,*
3. *Sympathetic Bubo;*

and it frequently issues in

1. *Gleet,*
2. *Stricture.*

2445. III. *The Treatment* consists in antiphlogistic remedies, the copaiba, cubebs, injections, &c.

II. EXCORIATION.

2446. This affection has frequently a similar origin, and is denoted by superficial redness, the removal of portions of the cuticle, and an offensive discharge, occupying principally the corona glandis and the adjacent part of the prepuce, and usually attended by phymosis and gonorrhœa.

III. THE SUPERFICIAL ULCER.

2447. This affection is divided by Mr. Carmichael, in his excellent work[1], into two kinds:—

1. *Without elevated Edges.*
2. *With elevated Edges.*

2448. 1. The *first* of these, the most frequent of venereal ulcers, is characterized by being superficial, and free from induration, and from elevation of its edges. In general, it is raised above the surrounding skin, and exhibits a smooth surface, the colour of a healthy sore; but it is without granulations, and has somewhat of a fungous appearance. Sometimes it is level with the surrounding surface, seldom excavated.

2449. These ulcers vary from the size of a pea to that of half-a-crown. They occur most frequently on the glans penis and inside of the prepuce, often exciting phymosis; but they also occur on the external surface of the penis and scrotum: in the latter situation, they are frequently raised, and resemble soft warts. In women, they occur in the labia, perinæum, and fossa of the nates. They are often complicated by gonorrhœa, or by a similar discharge from the mucous membrane of the glans or prepuce.

2450. 2. The *second* form of superficial ulcer differs from the former one by having elevated edges; it displays a whitish or reddish-brown surface, without granulations. It is not excavated, but may be raised; and it is free from induration.

2451. It appears most frequently on the external surface of the prepuce, penis, or scrotum, and varies from the size of a pea to that of a shilling. It frequently occupies the orifice of the prepuce, and frequently causes phymosis.

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[1] An Essay on Venereal Diseases, 4to. 1814.

2452. This ulcer frequently leads to obstinate buboes.

2453. Mr. Carmichael is of opinion that the same *constitutional Symptoms* arise in each of the four cases which have been described, and which he ascribes to the same original poison. Those symptoms are " more or less fever, which ushers in a *papular eruption*, inflammation and soreness of the fauces, attended with difficulty in swallowing, severe pains which affect the head and larger joints, and sometimes inflammatory swellings over the superficial bones."

2454. *The Treatment* consists of blood-letting, sarsaparilla, and *alterative* doses of mercury.

IV. PHAGEDENIC ULCER.

2455. This ulcer, the character of which is obvious at first sight, is usually situated on the glans penis, more or less of which it destroys by a more or less gradual or rapid progress: there is no appearance of granulation; when healed, or nearly so, it frequently resumes the phagedenic appearance.

2756. *The Treatment* consists in blood-letting and antimonials at the first; and afterwards in the conium, the sarsaparilla, &c.

V. THE SLOUGHING ULCER.

2457. This ulcer, more terrible in its devastations than the phagedenic ulcer, is characterized by the presence of a slough, which is small, circumscribed, and black at first, but afterwards more or less extensive and ragged. When this slough separates, it frequently displays an ulcer of a phagedenic character. There is then pain, and the formation of a fresh slough, and thus the penis, the pudenda, are destroyed, and even the bladder and uterus themselves.

2458. *The Treatment* consists in opium, the conium, change of air, &c. *avoiding* mercury and bark.

2459. The *constitutional Symptoms* are, according to Mr. Carmichael, the *same* in the *phagedenic* and in the *sloughing* ulcers, and consist of a *pustular eruption* on the skin, which degenerates into ulcers covered by crusts;—in

" a white, slimy ulceration of the tonsils and pharynx," of the velum and uvula, which it promptly destroys, and of the nares, when it induces a fœtid discharge, with caries; and in pain of the joints, especially of the knees, wrists, and ankles, but also of the fingers and toes, which become red and painful.

2460. The constitutional symptoms are relieved by mild, and exasperated by the decided mercurial treatment; they are most benefited by the sarsaparilla, conjoined with antimonials or the pulvis ipecacuanhæ compositus, and change of air.

VI. SYPHILITIC ULCER.

2461. This ulcer is still best described by Mr. Hunter, as " a sore somewhat of a circular form, excavated, without granulations, with matter adhering to the surface, and with a thickened edge and base. This hardness or thickness is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly[1]."

2462. The *constitutional Symptoms* are, according to Mr. Carmichael, a *scaly eruption*, which appears on the forehead, groins, &c. and on the palms of the hands, except when the skin is in contact with other skin, when it is elevated, moist, flat, and warty;—*ulceration of the throat*, described by Mr. Hunter as " a fair loss of substance, part being dug out, as it were, from the body of the tonsil, with a determined edge, commonly found with white matter adhering to it, like a slough which cannot be washed away[2];" —*nodes*, which affect, principally, the *superficial* bones, as the tibia, sternum, clavicle, and cranium, being deeply situated in their substance and unattended with discolouration.

2463. *The Effects of Remedies.* Whilst all the *other* forms of venereal diseases are unrelieved, perhaps greatly exasperated, by the use of mercury, true syphilis undergoes an amelioration which proceeds *pari passu*, with the influence of mercury on the system.

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[1] Hunter on the Venereal Disease.

[2] Ibid.

2464. I have only to add that these distinctions, and especially the *associations* of primary and secondary symptoms, must not be received implicitly. The subject is full of interest and importance, and requires fresh examination. Some forms of eruption are omitted, as the *tubercular.*

VII. HERPES PRÆPUTIALIS.

2465. This affection consists in one or two clusters of vesicles, situated on the præpuce, or on the labia pudendi. Transparent at first, these vesicles become opaque, and then assume a peculiar appearance. On the internal surface, these vesicles lead, on the fourth or fifth day, to a small ulceration; on the external surface, to a scab, about the sixth. This affection yields without remedies. It is apt to recur.

2466. Herpes Præputialis is precisely similar to that familiar form of Herpes seen on the lip, from exposure to cold.

VIII. SCIRRHUS—CARCINOMA.

2467. Cancer of the penis frequently arises from a wart or warts, situated on the glans, frænum or præpuce. Long indolent, this local disease, when irritated, may lead to the formation of Scirrhus, having its usual character of induration; and this, to ulceration or Carcinoma. The course of this disease is usually slowly progressive: it eventually involves the inguinal glands, and the integuments of the pubes, or scrotum.

2468. Mr. Earle[1] has made some interesting observations upon *diseases resembling cancer*, induced by local irritation, from which I extract the following description of a disease affecting the penis: It occurs in persons with elongated foreskins, from want of cleanliness. The prepuce becomes excoriated and œdematous, and the frænum thickened; and there is phymosis. The further irritation of the urine induces ulceration, swelling, and induration.

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[1] Medico-Chirurgical Transactions, vol. xii, p. 268.

II. DISEASES OF THE TESTIS, SCROTUM, ETC.

I. INFLAMMATION.

2469. I. *The History.* The testis may become inflamed from blows or other similar causes; but the most frequent cause is *gonorrhœa.*

2470. II. *The Symptoms* are heat, tenderness, and swelling, affecting, like all other diseases of this organ,—

1. *The body of the Testis principally*, or
2. *The Chord and Epididymis.*

This affection may issue in

1. *Enlargement.*
2. *Abscess or Abscesses.*
3. *Sloughs of Cellular Membrane.*

II. TUBERCLES.

2471. *The Symptoms* of the Tuberculous Testis are those of slow inflammation. This affection usually arises from gonorrhœa, and affects the *epididymis.*

III. FIBROUS TUMOR—ENCEPHALOSIS—SCIRRHUS.

2472. The Fibrous Tumor is distinguished by its uniform shape from Encephalosis, and by its want of extreme induration, from Scirrhus. *All* occupy *the body of the testis* chiefly. The first is *purely local;* the others apt to *spread*, and apt to occur in *distant parts*[1].

2473. A singular disease must be noticed in this place, termed the

IV. CHIMNEY-SWEEPER'S CANCER.

2474. I. *The History.* This disease does not occur in children or the very young subject. It is caused by the irritation of soot, within the cuticular folds, chiefly of the scrotum, in those predisposed, in middle age, to such disease.

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[1] Encephalosis seems to push the textures in which it is situated aside; Scirrhus seems to involve them in its extension.

2475. II. *The Symptoms.* This disease is denoted by a warty excrescence, which eventually ulcerates, the edges of the ulcer being everted, and affected by fungous growths; the discharge is fœtid; and there is much induration. The disease spreads, and eventually may involve the entire scrotum, the perinæum, the testis, the inguinal glands, &c.

2476. III. *The Treatment* consists in removing the diseased part, and attention to the general health, cleanliness, &c.

V. HYDROCELE.

2477. Hydrocele is distinguished, and its extent in complicated cases traced, by its transparency.

VI. VARICOCELE.

2478. Varicocele is ascertained by its peculiar, varicose feel; and by its disappearing in the recumbent position.

2479. Hernia is ascertained by its history, by its being reducible, by its tympanitic feel and sound, &c.

II. IN THE FEMALE SEX.

I. THE DISEASES OF THE PUDENDA.

I. INFLAMMATION.

2480. Inflammation may affect the pudenda, from internal and external causes, and lead to—

1. *Swelling, and*
2. *Suppuration.*

II. PRURITIS; ETC.

2481. Herpes of the pudenda has been already mentioned, § 2204. Sometimes, especially in disease of the uterus, there is extreme pruritus: *this symptom alone should always lead to an examination per vaginam.* In other cases, there is excoriation, or aphthæ, or verrucæ, the nature of which is only ascertained and the treatment suggested on inspection.

III. VASCULAR TUMOR OF THE MEATUS.

2482. Sir C. M. Clarke has described a vascular tumor occupying the orifice of the meatus urinarius. It is exquisitely tender to the touch; and attended by a mucous discharge. It is ascertained at once, by an inspection of the part. It is cured by ligature.

IV. VARICOSE VESSELS OF THE URETHRA.

2483. The vessels of the urethra sometimes become varicose. This disease is also described by Sir C. M. Clarke. The urine is apt to be detained in the posterior part of the urethra, causing a pouch, and inducing a constant desire to make water.

V. AFFECTIONS OF THE ANUS.

2484. With or without an affection of the pudenda, there may be pruritus, excoriation, verrucæ, &c. of the verge of the anus, inducing great distress. An inspection alone can establish the diagnosis, and suggest the treatment.

II. THE DISEASES OF THE VAGINA.

I. INFLAMMATION.

2845. Besides gonorrhœa, other forms of inflammation affect the vagina, attended by mucous discharges and constituting vaginal leucorrhœa. Such a complaint may continue during pregnancy, in which case *uterine* leucorrhœa ceases. It is readily cured by the injection of the nitras argenti.

II. TUMORS.

2486. Tumors may form in any part adjacent to the exterior surface of the vagina. Dr. Heming has described some interesting cases of this kind. These tumors may be—

1. *Mere Abscess; or*
2. *Encysted,*
3. *Fibrous,*
4. *Tuberculous,*
5 *Encephaloid, or*
6. *Scirrhous.*

2487. The *Diagnosis* and the *Treatment* will depend on the *History*, *Symptoms*, and a careful *Examination.*

THE END.

POSTSCRIPT.

⁂ I have adverted, p. 309, to a *Review* of my Lectures on the Nervous System and its Diseases, by Dr. Alison, and to a *Notice* of the same subject, I believe, by Dr. Forbes, in No. V of the British and Foreign Medical Review, and I have pointed out how those specimens of criticism *contradict each other.* I have just received No. VI, in which I expected to find some slight "amende honorable;" instead of this, however, I am sorry to observe an obstinate perseverance in error and injustice, equally unworthy of the writers, of our medical literature, and of further notice.

I will only add, that an interesting parallel might be instituted between the *history* of the *principle* of *Irritability,* and of that to which I have assigned the designation of *excito-motory:*

The *phenomena* of irritability were known to Harvey and other physiologists before the time of Haller;

But they were, previously to the distinction first made by this eminent physiologist, confounded with *sensation*, or other functions of the *mind*, or of the *soul;*

Even Glisson, the first to use the term irritability, and Whytt, the most pertinacious of the opponents of Haller, fell into this error;

Haller speaks of his opponents as reduced to the necessity of admitting "un sentiment insensible," "des actes de volonté involontaires," and "la divisibilité de l'âme;"

Amongst his opponents, some, not seeing that it was the *principle*, and not the *facts* on which it was founded, of which he claimed the discovery, disputed the *originality*, whilst others, making this distinction, disputed the *correctness*, of his views: De la Mettrie pretended to the discovery himself; Whytt disputed its reality to the last;

Time has, however, settled all these disputes, and left to Haller the indubitable merit of the discovery of one of the most important *principles* of physiology.

I need scarcely observe how similar has been the early lot of the principle which I now attempt to establish. They who know the subject best, will be best enabled to trace this parallel.

In regard to the relative value and importance of these two principles, I may observe that, whilst both equally preside over a peculiar class of *functions*, the principle of the excito-motory property has an application to *pathology* and to *therapeutics*, not possessed by that of the irritability.

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WORKS BY THE AUTHOR.

I.

LECTURES on the **NERVOUS SYSTEM** and its **DISEASES.**

II.

OBSERVATIONS on the **Use** of **BLOOD-LETTING**, and the **MORBID EFFECTS OF LOSS OF BLOOD.**

III.

COMMENTARIES on the **DISEASES OF FEMALES.**